PACIFICORP FUEL RESOURCES
EAST MOUNTAIN PRECIPITATION 1990

DATE	TIME		INCHES PRECIPITATION	
04-Sep-90	02:09 PM	START		
04-Sep-90	02:54 PM	STOP	0.27	
16-Sep-90	02:23 AM	START		
16-Sep-90	04:15 AM	STOP	0.16	
16-Sep-90	10:38 AM	START		
16-Sep-90	11:23 AM	STOP	0.01	
17-Sep-90	06:29 PM	START		
17-Sep-90	08:22 PM	STOP	0.02	
18-Sep-90	07:14 AM	START		
18-Sep-90	06:51 PM	STOP	0.42	
19-Sep-90	12:07 AM	START		
19-Sep-90	04:13 AM	STOP	0.01	
23-Sep-90	09:47 AM	START		
24-Sep-90	05:16 AM	STOP	0.28	
27-Sep-90	05:13 PM	START		
27-Sep-90	10:29 PM	STOP	0.06	
28-Sep-90	01:06 AM	START		
28-Sep-90	04:29 AM	STOP	0.02	
28-Sep-90	09:44 AM	START		
28-Sep-90	06:21 PM	STOP	0.25	
28-Sep-90	09:43 PM	START		
29-Sep-90	02:35 AM	STOP	0.01	1.62 INCHES PRECIP.
TOTAL 1990				10.90 INCHES PRECIP.

EAST MOUNTAIN TEMPERATURES - HISTORICAL SUMMARY

OCTOBER SUMMARY

	HIGH	LOW
AVG.	46.2	30.1
MAX.	60.2	42.1
MIN.	22.3	9.5

NOVEMBER SUMMARY

	HIGH	LOW
AVG.	34.9	21.8
MAX.	48.9	36.6
MIN.	13.0	1.9

DECEMBER SUMMARY

	HIGH	LOW
AVG.	29.5	13.7
MAX.	44.1	27.7
MIN.	2.7	-8.8

JANUARY SUMMARY

	HIGH	LOW
AVG.	29.5	14.4
MAX.	45.3	28.7
MIN.	2.0	-15.2

FEBRUARY SUMMARY

	HIGH	LOW
AVG.	31.9	15.2
MAX.	46.5	29.9
MIN.	-2.3	-14.7

MARCH SUMMARY

	HIGH	LOW
AVG.	37.2	19.9
MAX.	50.7	31.1
MIN.	13.3	0.1

APRIL SUMMARY

	HIGH	LOW
AVG.	46.2	26.5
MAX.	62.4	40.8
MIN.	12.7	-0.3

MAY SUMMARY

	HIGH	LOW
AVG.	52.4	32.6
MAX.	69.8	45.5
MIN.	15.8	3.4

JUNE SUMMARY

	HIGH	LOW
AVG.	66.6	43.7
MAX.	79.2	58.6
MIN.	27.7	13.1

JULY SUMMARY

	HIGH	LOW
AVG.	72.3	50.8
MAX.	83.5	59.5
MIN.	48.5	20.4

AUGUST SUMMARY

	HIGH	LOW
AVG.	71.1	50.9
MAX.	81.3	59.0
MIN.	47.6	32.7

SEPTEMBER SUMMARY

	HIGH	LOW
AVG.	60.6	41.8
MAX.	76.1	54.0
MIN.	31.6	20.0

HISTORICAL SUMMARY

PARAMETER	DATE	TEMP
AVERAGE HIGH		48.2
MAXIMUM HIGH	31-Jan-85	89.3
AVG. MAX. HIGH		84.7
MINIMUM HIGH	05-Feb-89	-2.3
AVG. MIN. HIGH		6.7
AVERAGE LOW		30.6
MAXIMUM LOW	03-Jun-89	67.0
AVG. MAX. LOW		61.7
MINIMUM LOW	31-Jan-85	-15.2
AVG. MIN. LOW		-6.3

EAST MOUNTAIN TEMPERATURES - 1990 WATER YEAR SUMMARY

Oct-89 SUMMARY

	HIGH	LOW
AVG.	49.6	29.9
MAX.	65.0	46.0
MIN.	28.5	10.0

Nov-89 SUMMARY

	HIGH	LOW
AVG.	41.7	26.9
MAX.	53.8	41.2
MIN.	25.3	4.8

Dec-89 SUMMARY

	HIGH	LOW
AVG.	30.5	17.2
MAX.	48.4	32.4
MIN.	13.3	5.0

Jan-90 SUMMARY

	HIGH	LOW
AVG.	26.6	12.5
MAX.	45.1	30.1
MIN.	12.3	-2.6

Feb-90 SUMMARY

	HIGH	LOW
AVG.	29.9	15.0
MAX.	48.0	28.4
MIN.	7.1	-4.9

Mar-90 SUMMARY

	HIGH	LOW
AVG.	39.2	21.7
MAX.	54.3	31.9
MIN.	14.3	6.4

Apr-90 SUMMARY

	HIGH	LOW
AVG.	48.2	28.7
MAX.	65.6	41.0
MIN.	32.4	10.9

May-90 SUMMARY

	HIGH	LOW
AVG.	54.0	32.5
MAX.	68.7	44.3
MIN.	40.3	16.6

Jun-90 SUMMARY

	HIGH	LOW
AVG.	70.1	46.7
MAX.	85.7	63.6
MIN.	35.4	25.3

Jul-90 SUMMARY

	HIGH	LOW
AVG.	71.3	48.8
MAX.	83.9	60.3
MIN.	57.1	42.8

Aug-90 SUMMARY

	HIGH	LOW
AVG.	79.7	57.3
MAX.	89.3	63.7
MIN.	74.0	55.4

Sep-90 SUMMARY

	HIGH	LOW
AVG.	68.5	48.9
MAX.	85.4	59.4
MIN.	65.4	46.6

1990 SUMMARY

PARAMETER	DATE	TEMP
AVG. HIGH	NA	50.8
MAX. HIGH	08-Aug-90	89.3
MIN. HIGH	15-Feb-90	7.1
AVG. LOW	NA	33.4
MAX. LOW	08-Aug-90	63.7
MIN. LOW	15-Feb-90	-4.9

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)	
01-Oct-89	01:40 AM	27.4	LOW
01-Oct-89	01:42 PM	51.4	HIGH
02-Oct-89	03:47 AM	34.5	LOW
02-Oct-89	11:37 AM	55.9	HIGH
03-Oct-89	02:13 PM	56.1	HIGH
03-Oct-89	09:36 PM	30.6	LOW
04-Oct-89	05:58 AM	24.3	LOW
04-Oct-89	12:47 PM	48.6	HIGH
05-Oct-89	03:38 AM	27.6	LOW
05-Oct-89	12:31 PM	51.4	HIGH
06-Oct-89	04:57 AM	35.0	LOW
06-Oct-89	12:33 PM	54.9	HIGH
07-Oct-89	04:17 AM	34.2	LOW
07-Oct-89	12:56 PM	54.7	HIGH
08-Oct-89	04:02 AM	36.6	LOW
08-Oct-89	12:06 PM	58.7	HIGH
09-Oct-89	12:55 PM	62.1	HIGH
09-Oct-89	08:36 PM	41.4	LOW
10-Oct-89	04:04 AM	41.4	LOW
10-Oct-89	12:32 PM	63.3	HIGH
11-Oct-89	05:28 AM	45.4	LOW
11-Oct-89	01:42 PM	63.1	HIGH
12-Oct-89	01:20 PM	63.8	HIGH
12-Oct-89	08:18 PM	46.0	LOW
13-Oct-89	04:46 AM	43.7	LOW
13-Oct-89	12:10 PM	65.0	HIGH
14-Oct-89	11:52 AM	63.8	HIGH
14-Oct-89	09:22 PM	40.0	LOW
15-Oct-89	06:57 AM	50.7	HIGH
15-Oct-89	09:44 PM	32.4	LOW
16-Oct-89	11:22 AM	44.5	HIGH
16-Oct-89	10:06 PM	26.5	LOW
17-Oct-89	02:20 AM	26.0	LOW
17-Oct-89	12:16 PM	46.7	HIGH
18-Oct-89	03:29 AM	26.0	LOW
18-Oct-89	12:45 PM	47.2	HIGH
19-Oct-89	03:35 AM	28.5	LOW
19-Oct-89	12:15 PM	48.4	HIGH
20-Oct-89	03:06 AM	30.8	LOW
20-Oct-89	11:22 AM	47.6	HIGH
21-Oct-89	08:37 AM	45.1	HIGH
21-Oct-89	05:12 PM	30.3	LOW
22-Oct-89	04:22 AM	37.9	HIGH
22-Oct-89	06:06 PM	33.4	LOW
23-Oct-89	07:05 AM	44.9	HIGH
23-Oct-89	08:06 PM	32.7	LOW
24-Oct-89	12:49 AM	32.3	LOW
24-Oct-89	10:20 AM	52.4	HIGH
25-Oct-89	10:37 AM	49.2	HIGH
25-Oct-89	07:44 PM	21.0	LOW
26-Oct-89	09:20 AM	34.8	HIGH
26-Oct-89	05:33 PM	22.5	LOW
27-Oct-89	11:09 AM	38.9	HIGH

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
27-Oct-89	10:08 PM		14.4	LOW
28-Oct-89	11:09 AM		12.6	LOW
28-Oct-89	04:14 PM	30.4		HIGH
29-Oct-89	04:36 AM		14.5	LOW
29-Oct-89	04:53 PM	35.9		HIGH
30-Oct-89	08:18 AM		10.0	LOW
30-Oct-89	12:02 PM	28.5		HIGH
31-Oct-89	12:44 AM		25.2	LOW
31-Oct-89	08:37 AM	40.2		HIGH
01-Nov-89	01:54 AM		28.4	LOW
01-Nov-89	08:35 AM	44.2		HIGH
02-Nov-89	12:12 AM		26.2	LOW
02-Nov-89	01:12 PM	41.8		HIGH
03-Nov-89	02:38 AM		22.9	LOW
03-Nov-89	04:19 PM	40.4		HIGH
04-Nov-89	01:12 AM		27.6	LOW
04-Nov-89	05:46 PM	45.6		HIGH
05-Nov-89	10:04 AM		26.0	LOW
05-Nov-89	04:26 PM	43.2		HIGH
06-Nov-89	09:02 AM		27.0	LOW
06-Nov-89	05:46 PM	40.7		HIGH
07-Nov-89	11:19 AM		24.4	LOW
07-Nov-89	06:55 PM	35.6		HIGH
08-Nov-89	10:35 AM		20.1	LOW
08-Nov-89	05:06 PM	33.8		HIGH
09-Nov-89	10:23 AM		29.8	LOW
09-Nov-89	07:21 PM	46.7		HIGH
10-Nov-89	01:00 PM		31.2	LOW
10-Nov-89	07:00 PM	51.5		HIGH
11-Nov-89	07:59 AM		39.1	LOW
11-Nov-89	08:06 PM	53.8		HIGH
12-Nov-89	11:04 AM	42.9		HIGH
12-Nov-89	04:58 PM		35.2	LOW
13-Nov-89	04:29 AM	48.8		HIGH
13-Nov-89	03:06 PM		32.2	LOW
14-Nov-89	03:24 AM	49.0		HIGH
14-Nov-89	04:45 PM		31.4	LOW
15-Nov-89	03:22 AM	31.3		HIGH
15-Nov-89	05:56 PM		16.8	LOW
16-Nov-89	04:13 AM	34.4		HIGH
16-Nov-89	03:51 PM		22.7	LOW
17-Nov-89	05:02 AM	39.0		HIGH
17-Nov-89	06:22 PM		27.6	LOW
18-Nov-89	07:09 AM	40.7		HIGH
18-Nov-89	04:06 PM		25.4	LOW
19-Nov-89	09:46 AM	44.7		HIGH
19-Nov-89	04:32 PM		35.5	LOW
20-Nov-89	09:10 AM	56.1		HIGH
20-Nov-89	04:25 PM		41.2	LOW
21-Nov-89	10:14 AM	54.4		HIGH
21-Nov-89	06:44 PM		34.9	LOW
22-Nov-89	08:26 AM	49.3		HIGH

Oct-89 SUMMARY

	HIGH	LOW
AVG.	49.6	29.9
MAX.	65.0	46.0
MIN.	28.5	10.0

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
22-Nov-89	09:09 PM		34.9	LOW
23-Nov-89	04:32 AM		30.6	LOW
23-Nov-89	01:35 PM	45.2		HIGH
24-Nov-89	03:44 AM		27.9	LOW
24-Nov-89	10:15 AM	41.2		HIGH
25-Nov-89	09:24 AM	40.8		HIGH
25-Nov-89	06:19 PM		25.4	LOW
26-Nov-89	04:59 AM		23.1	LOW
26-Nov-89	10:16 AM	34.9		HIGH
27-Nov-89	04:00 AM	30.0		HIGH
27-Nov-89	06:50 PM		11.5	LOW
28-Nov-89	06:31 AM		4.8	LOW
28-Nov-89	01:40 PM	25.3		HIGH
29-Nov-89	06:53 AM	30.1		HIGH
29-Nov-89	06:32 PM		20.3	LOW
30-Nov-89	05:37 AM	34.8		HIGH
30-Nov-89	03:17 PM		21.5	LOW
01-Dec-89	05:10 AM	38.0		HIGH
01-Dec-89	06:34 PM		21.7	LOW
02-Dec-89	06:11 AM	35.1		HIGH
02-Dec-89	12:59 PM		25.3	LOW
03-Dec-89	12:48 AM		22.2	LOW
03-Dec-89	06:38 AM	33.1		HIGH
04-Dec-89	02:52 AM		32.4	LOW
04-Dec-89	11:03 AM	48.4		HIGH
05-Dec-89	04:24 AM		30.6	LOW
05-Dec-89	02:44 PM	41.0		HIGH
06-Dec-89	02:19 AM	29.8		HIGH
06-Dec-89	08:42 PM		19.5	LOW
07-Dec-89	11:46 AM		10.9	LOW
07-Dec-89	06:52 PM	28.7		HIGH
08-Dec-89	05:34 AM		19.7	LOW
08-Dec-89	08:48 PM	35.6		HIGH
09-Dec-89	03:42 AM		23.9	LOW
09-Dec-89	12:01 PM	33.2		HIGH
10-Dec-89	03:21 AM	32.8		HIGH
10-Dec-89	06:01 PM		7.3	LOW
11-Dec-89	02:10 AM	13.3		HIGH
11-Dec-89	07:14 PM		5.2	LOW
12-Dec-89	03:16 AM	22.6		HIGH
12-Dec-89	07:07 PM		9.5	LOW
13-Dec-89	04:58 AM	24.6		HIGH
13-Dec-89	02:48 PM		13.3	LOW
14-Dec-89	03:15 AM	26.1		HIGH
14-Dec-89	07:08 PM		17.6	LOW
15-Dec-89	04:12 AM	26.3		HIGH
15-Dec-89	06:03 PM		10.5	LOW
16-Dec-89	08:46 AM		5.0	LOW
16-Dec-89	04:57 PM	21.2		HIGH
17-Dec-89	11:44 AM		12.0	LOW
17-Dec-89	07:58 PM	19.7		HIGH
18-Dec-89	07:51 AM	24.5		HIGH

Nov-89 SUMMARY

	HIGH	LOW
AVG.	41.7	26.9
MAX.	53.8	41.2
MIN.	25.3	4.8

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)	
18-Dec-89	02:43 PM	15.6	LOW
19-Dec-89	03:46 AM	17.6	LOW
19-Dec-89	10:04 AM	30.5	HIGH
20-Dec-89	04:45 AM	17.9	LOW
20-Dec-89	11:56 AM	23.4	HIGH
21-Dec-89	06:35 AM	14.2	LOW
21-Dec-89	02:30 PM	31.6	HIGH
22-Dec-89	04:55 AM	24.9	LOW
22-Dec-89	04:58 PM	39.6	HIGH
23-Dec-89	06:21 AM	19.8	LOW
23-Dec-89	06:57 PM	33.4	HIGH
24-Dec-89	03:12 AM	21.9	LOW
24-Dec-89	10:06 PM	38.3	HIGH
25-Dec-89	05:09 AM	38.5	HIGH
25-Dec-89	04:40 PM	24.4	LOW
26-Dec-89	04:48 AM	40.1	HIGH
26-Dec-89	06:13 PM	23.4	LOW
27-Dec-89	06:04 AM	34.9	HIGH
27-Dec-89	08:05 PM	18.7	LOW
28-Dec-89	07:04 AM	27.5	HIGH
28-Dec-89	08:59 PM	12.2	LOW
29-Dec-89	06:42 AM	27.3	HIGH
29-Dec-89	08:20 PM	10.3	LOW
30-Dec-89	03:02 AM	10.5	LOW
30-Dec-89	10:52 AM	17.6	HIGH
31-Dec-89	03:54 AM	15.0	LOW
31-Dec-89	11:24 AM	30.0	HIGH
01-Jan-90	05:27 AM	9.8	LOW
01-Jan-90	11:30 AM	22.8	HIGH
02-Jan-90	12:52 PM	21.9	HIGH
02-Jan-90	04:20 PM	6.6	LOW
03-Jan-90	09:26 AM	12.3	HIGH
03-Jan-90	03:22 PM	1.7	LOW
04-Jan-90	12:01 AM	15.7	HIGH
04-Jan-90	04:34 AM	7.4	LOW
05-Jan-90	04:22 AM	10.9	LOW
05-Jan-90	07:12 PM	26.8	HIGH
06-Jan-90	12:06 AM	33.9	HIGH
06-Jan-90	04:19 PM	18.8	LOW
07-Jan-90	01:31 AM	32.3	HIGH
07-Jan-90	07:01 AM	22.5	LOW
08-Jan-90	05:12 AM	34.9	HIGH
08-Jan-90	03:50 PM	25.9	LOW
09-Jan-90	03:17 AM	42.1	HIGH
09-Jan-90	12:20 PM	28.1	LOW
10-Jan-90	04:37 AM	45.1	HIGH
10-Jan-90	03:00 PM	30.1	LOW
11-Jan-90	06:37 AM	43.6	HIGH
11-Jan-90	08:46 PM	22.5	LOW
12-Jan-90	04:55 AM	34.1	HIGH
12-Jan-90	07:24 PM	17.9	LOW
13-Jan-90	06:58 AM	28.5	HIGH

Dec-89 SUMMARY

	HIGH	LOW
AVG.	30.5	17.2
MAX.	48.4	32.4
MIN.	13.3	5.0

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)	
13-Jan-90	06:36 PM	17.0	LOW
14-Jan-90	03:45 AM	25.1	HIGH
14-Jan-90	07:59 PM	9.7	LOW
15-Jan-90	06:25 AM	26.1	HIGH
15-Jan-90	05:04 PM	9.7	LOW
16-Jan-90	06:56 AM	22.2	HIGH
16-Jan-90	11:34 AM	10.2	LOW
17-Jan-90	08:13 AM	17.3	HIGH
17-Jan-90	12:43 PM	9.4	LOW
18-Jan-90	01:54 AM	10.4	LOW
18-Jan-90	08:27 AM	21.7	HIGH
19-Jan-90	09:46 AM	19.0	HIGH
19-Jan-90	06:44 PM	11.0	LOW
20-Jan-90	03:53 AM	10.3	LOW
20-Jan-90	10:17 AM	26.7	HIGH
21-Jan-90	05:11 AM	14.1	LOW
21-Jan-90	03:50 PM	33.1	HIGH
22-Jan-90	08:41 AM	11.8	LOW
22-Jan-90	03:02 PM	27.1	HIGH
23-Jan-90	03:01 PM	29.3	HIGH
23-Jan-90	07:28 PM	8.3	LOW
24-Jan-90	07:30 AM	1.1	LOW
24-Jan-90	09:08 PM	14.4	HIGH
25-Jan-90	07:43 AM	32.9	HIGH
25-Jan-90	05:36 PM	13.5	LOW
26-Jan-90	09:27 AM	30.5	HIGH
26-Jan-90	07:28 PM	-2.6	LOW
27-Jan-90	03:41 AM	-1.0	LOW
27-Jan-90	09:15 AM	14.3	HIGH
28-Jan-90	04:28 AM	9.3	LOW
28-Jan-90	10:31 AM	23.7	HIGH
29-Jan-90	03:19 AM	19.0	HIGH
29-Jan-90	08:23 PM	13.4	LOW
30-Jan-90	04:05 AM	14.4	LOW
30-Jan-90	11:15 AM	20.5	HIGH
31-Jan-90	05:13 AM	16.6	LOW
31-Jan-90	08:23 AM	27.1	HIGH
01-Feb-90	09:38 AM	20.9	HIGH
01-Feb-90	07:51 PM	9.4	LOW
02-Feb-90	01:46 AM	8.3	LOW
02-Feb-90	09:11 AM	16.5	HIGH
03-Feb-90	09:40 AM	25.2	HIGH
03-Feb-90	08:37 PM	6.7	LOW
04-Feb-90	03:54 AM	7.5	LOW
04-Feb-90	10:10 AM	23.7	HIGH
05-Feb-90	04:57 AM	15.4	LOW
05-Feb-90	11:45 AM	31.7	HIGH
06-Feb-90	07:03 AM	15.1	LOW
06-Feb-90	11:09 AM	26.2	HIGH
07-Feb-90	02:06 PM	26.3	HIGH
07-Feb-90	08:34 PM	8.8	LOW
08-Feb-90	06:42 AM	1.8	LOW

Jan-90 SUMMARY

	HIGH	LOW
AVG.	26.6	12.5
MAX.	45.1	30.1
MIN.	12.3	-2.6

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
08-Feb-90	03:22 PM	24.0		HIGH
09-Feb-90	08:19 AM		9.5	LOW
09-Feb-90	03:22 PM	30.4		HIGH
10-Feb-90	08:50 AM		20.9	LOW
10-Feb-90	03:58 PM	31.4		HIGH
11-Feb-90	10:57 AM		20.3	LOW
11-Feb-90	05:02 PM	39.8		HIGH
12-Feb-90	08:17 AM		22.5	LOW
12-Feb-90	05:04 PM	34.0		HIGH
13-Feb-90	12:43 PM		21.8	LOW
13-Feb-90	06:35 PM	28.8		HIGH
14-Feb-90	02:07 AM	19.6		HIGH
14-Feb-90	07:26 PM		1.1	LOW
15-Feb-90	06:54 AM		-4.9	LOW
15-Feb-90	07:25 PM	7.1		HIGH
16-Feb-90	07:56 AM		-3.9	LOW
16-Feb-90	08:18 PM	14.0		HIGH
17-Feb-90	02:22 AM	23.1		HIGH
17-Feb-90	11:33 AM		14.0	LOW
18-Feb-90	05:13 AM	28.5		HIGH
18-Feb-90	02:18 PM		17.1	LOW
19-Feb-90	05:18 AM	25.1		HIGH
19-Feb-90	01:49 PM		17.6	LOW
20-Feb-90	02:07 AM		18.8	LOW
20-Feb-90	11:29 AM	31.1		HIGH
21-Feb-90	02:17 AM		21.4	LOW
21-Feb-90	05:50 AM	27.5		HIGH
22-Feb-90	01:41 AM		25.7	LOW
22-Feb-90	08:59 AM	35.1		HIGH
23-Feb-90	02:28 AM		22.9	LOW
23-Feb-90	11:11 AM	45.2		HIGH
24-Feb-90	03:33 AM		23.7	LOW
24-Feb-90	10:23 AM	44.6		HIGH
25-Feb-90	03:36 AM		28.4	LOW
25-Feb-90	12:48 PM	43.2		HIGH
26-Feb-90	04:56 AM		26.6	LOW
26-Feb-90	02:19 PM	48.0		HIGH
27-Feb-90	11:48 AM	44.5		HIGH
27-Feb-90	08:11 PM		23.5	LOW
28-Feb-90	04:05 AM		20.5	LOW
28-Feb-90	03:22 PM	41.3		HIGH
01-Mar-90	04:08 AM		22.4	LOW
01-Mar-90	08:34 AM	40.0		HIGH
02-Mar-90	01:18 AM		23.3	LOW
02-Mar-90	06:40 AM	36.1		HIGH
03-Mar-90	09:23 AM	37.5		HIGH
03-Mar-90	08:00 PM		25.1	LOW
04-Mar-90	02:23 AM		24.7	LOW
04-Mar-90	08:07 AM	38.2		HIGH
05-Mar-90	07:27 AM	29.0		HIGH
05-Mar-90	02:04 PM		17.6	LOW
06-Mar-90	02:02 AM		17.6	LOW

Feb-90 SUMMARY

	HIGH	LOW
AVG.	29.9	15.0
MAX.	48.0	28.4
MIN.	7.1	-4.9

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
06-Mar-90	08:16 AM	21.1		HIGH
07-Mar-90	12:51 AM		17.2	LOW
07-Mar-90	09:27 AM	38.7		HIGH
08-Mar-90	01:04 AM		20.8	LOW
08-Mar-90	06:25 AM	36.8		HIGH
09-Mar-90	01:05 AM		26.9	LOW
09-Mar-90	08:42 AM	45.9		HIGH
10-Mar-90	08:06 AM	44.0		HIGH
10-Mar-90	08:35 PM		23.9	LOW
11-Mar-90	03:40 AM	26.4		HIGH
11-Mar-90	09:33 PM		7.1	LOW
12-Mar-90	01:18 AM		7.1	LOW
12-Mar-90	05:56 AM	24.3		HIGH
13-Mar-90	05:15 AM	14.3		HIGH
13-Mar-90	12:43 PM		6.4	LOW
14-Mar-90	12:44 AM		8.0	LOW
14-Mar-90	07:41 AM	20.9		HIGH
15-Mar-90	12:01 AM		12.2	LOW
15-Mar-90	07:38 AM	20.5		HIGH
16-Mar-90	12:33 AM		16.4	LOW
16-Mar-90	10:08 AM	41.3		HIGH
17-Mar-90	01:17 AM		26.7	LOW
17-Mar-90	10:05 AM	45.6		HIGH
18-Mar-90	09:55 AM	48.3		HIGH
18-Mar-90	09:08 PM		22.6	LOW
19-Mar-90	12:30 AM		22.4	LOW
19-Mar-90	09:59 AM	49.2		HIGH
20-Mar-90	07:08 AM	47.6		HIGH
20-Mar-90	06:54 PM		31.0	LOW
21-Mar-90	10:03 AM	47.7		HIGH
21-Mar-90	08:23 PM		30.8	LOW
22-Mar-90	12:31 AM		30.8	LOW
22-Mar-90	08:02 AM	52.2		HIGH
23-Mar-90	06:26 AM	44.7		HIGH
23-Mar-90	09:01 PM		24.8	LOW
24-Mar-90	12:24 AM		24.2	LOW
24-Mar-90	08:42 AM	47.1		HIGH
25-Mar-90	12:34 AM		29.4	LOW
25-Mar-90	09:40 AM	53.6		HIGH
26-Mar-90	01:49 AM		31.9	LOW
26-Mar-90	10:06 AM	54.3		HIGH
27-Mar-90	09:21 AM	52.4		HIGH
27-Mar-90	09:35 PM		27.8	LOW
28-Mar-90	07:45 AM	37.1		HIGH
28-Mar-90	07:01 PM		23.0	LOW
29-Mar-90	02:28 AM	37.2		HIGH
29-Mar-90	08:27 PM		21.2	LOW
30-Mar-90	07:16 AM	37.3		HIGH
30-Mar-90	05:28 PM		22.5	LOW
31-Mar-90	08:51 AM	44.8		HIGH
31-Mar-90	06:55 PM		26.2	LOW
01-Apr-90	09:12 AM	48.4		HIGH

Mar-90 SUMMARY

	HIGH	LOW
AVG.	39.2	21.7
MAX.	54.3	31.9
MIN.	14.3	6.4

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)	
01-Apr-90	07:57 PM	27.9	LOW
02-Apr-90	01:14 AM	27.3	LOW
02-Apr-90	04:14 PM	50.3	HIGH
03-Apr-90	04:36 AM	31.0	LOW
03-Apr-90	12:50 PM	53.2	HIGH
04-Apr-90	04:23 AM	29.3	LOW
04-Apr-90	11:23 AM	50.6	HIGH
05-Apr-90	01:34 PM	47.4	HIGH
05-Apr-90	09:27 PM	30.8	LOW
06-Apr-90	03:58 AM	25.3	LOW
06-Apr-90	02:43 PM	51.2	HIGH
07-Apr-90	04:09 AM	30.1	LOW
07-Apr-90	10:34 AM	47.8	HIGH
08-Apr-90	08:06 AM	37.2	HIGH
08-Apr-90	09:24 AM	25.7	LOW
09-Apr-90	01:56 AM	25.8	LOW
09-Apr-90	11:30 AM	37.4	HIGH
10-Apr-90	03:28 AM	26.3	LOW
10-Apr-90	01:00 PM	53.0	HIGH
11-Apr-90	02:55 AM	30.8	LOW
11-Apr-90	11:46 AM	52.7	HIGH
12-Apr-90	04:24 AM	35.0	LOW
12-Apr-90	11:20 AM	50.3	HIGH
13-Apr-90	02:28 AM	33.1	LOW
13-Apr-90	12:28 PM	49.8	HIGH
14-Apr-90	03:40 AM	39.7	LOW
14-Apr-90	09:44 AM	57.8	HIGH
15-Apr-90	01:24 AM	41.0	LOW
15-Apr-90	02:36 PM	65.6	HIGH
16-Apr-90	12:16 PM	62.8	HIGH
16-Apr-90	11:41 PM	38.2	LOW
17-Apr-90	01:19 PM	46.8	HIGH
17-Apr-90	10:17 PM	31.3	LOW
18-Apr-90	02:53 AM	27.9	LOW
18-Apr-90	10:52 AM	40.8	HIGH
19-Apr-90	02:35 AM	29.6	LOW
19-Apr-90	11:11 AM	53.3	HIGH
20-Apr-90	01:53 AM	32.6	LOW
20-Apr-90	12:33 PM	61.4	HIGH
21-Apr-90	03:41 AM	32.0	LOW
21-Apr-90	10:31 AM	54.2	HIGH
22-Apr-90	09:55 AM	47.2	HIGH
22-Apr-90	06:53 PM	32.0	LOW
23-Apr-90	06:58 AM	47.3	HIGH
23-Apr-90	10:09 PM	28.5	LOW
24-Apr-90	07:31 AM	37.5	HIGH
24-Apr-90	07:35 PM	27.0	LOW
25-Apr-90	02:41 AM	27.4	LOW
25-Apr-90	10:05 AM	40.0	HIGH
26-Apr-90	02:33 AM	26.6	LOW
26-Apr-90	12:16 PM	35.3	HIGH
27-Apr-90	01:37 AM	26.2	LOW
27-Apr-90	10:54 AM	47.1	HIGH

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
28-Apr-90	12:04 PM	50.9		HIGH
28-Apr-90	05:54 PM		13.1	LOW
29-Apr-90	02:12 AM		10.9	LOW
29-Apr-90	09:45 AM	32.4		HIGH
30-Apr-90	01:57 AM		18.8	LOW
30-Apr-90	12:38 PM	35.6		HIGH
01-May-90	02:29 AM		21.7	LOW
01-May-90	12:31 PM	41.2		HIGH
02-May-90	01:12 AM		34.3	LOW
02-May-90	11:58 AM	46.9		HIGH
03-May-90	02:20 AM		33.5	LOW
03-May-90	01:48 PM	49.1		HIGH
04-May-90	03:56 AM		30.3	LOW
04-May-90	02:51 PM	50.5		HIGH
05-May-90	05:23 AM		28.9	LOW
05-May-90	03:27 PM	59.4		HIGH
06-May-90	05:15 AM		38.1	LOW
06-May-90	02:42 PM	65.9		HIGH
07-May-90	11:56 AM	55.6		HIGH
07-May-90	07:11 PM		40.0	LOW
08-May-90	09:23 AM	40.3		HIGH
08-May-90	09:54 PM		21.1	LOW
09-May-90	05:26 AM		16.6	LOW
09-May-90	03:44 PM	50.5		HIGH
10-May-90	04:24 AM		30.6	LOW
10-May-90	01:44 PM	58.4		HIGH
11-May-90	12:09 PM	50.9		HIGH
11-May-90	08:28 PM		29.8	LOW
12-May-90	07:40 AM		27.7	LOW
12-May-90	04:52 PM	48.6		HIGH
13-May-90	02:30 AM		36.3	LOW
13-May-90	03:08 PM	50.7		HIGH
14-May-90	11:18 AM	52.1		HIGH
14-May-90	09:42 PM		34.0	LOW
15-May-90	03:25 PM	40.4		HIGH
15-May-90	09:44 PM		27.1	LOW
16-May-90	05:25 AM		24.4	LOW
16-May-90	01:37 PM	52.8		HIGH
17-May-90	04:22 AM		33.6	LOW
17-May-90	01:25 PM	63.6		HIGH
18-May-90	02:37 PM	52.9		HIGH
18-May-90	09:01 PM		39.5	LOW
19-May-90	04:07 AM		36.3	LOW
19-May-90	11:23 AM	59.6		HIGH
20-May-90	04:18 AM		27.9	LOW
20-May-90	01:47 PM	55.1		HIGH
21-May-90	04:38 AM		40.5	LOW
21-May-90	11:55 AM	65.6		HIGH
22-May-90	03:56 AM		44.3	LOW
22-May-90	03:04 PM	68.1		HIGH
23-May-90	04:21 AM		41.7	LOW
23-May-90	10:58 AM	68.7		HIGH

Apr-90 SUMMARY

	HIGH	LOW
AVG.	48.2	28.7
MAX.	65.6	41.0
MIN.	32.4	10.9

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
24-May-90	11:38 AM	47.9		HIGH
24-May-90	07:44 PM		34.2	LOW
25-May-90	04:03 AM		27.3	LOW
25-May-90	12:47 PM	57.2		HIGH
26-May-90	02:30 AM		40.7	LOW
26-May-90	08:40 AM	55.1		HIGH
27-May-90	04:22 AM		37.6	LOW
27-May-90	12:30 PM	63.0		HIGH
28-May-90	07:04 AM	47.5		HIGH
28-May-90	08:03 PM		31.2	LOW
29-May-90	05:23 AM		28.0	LOW
29-May-90	12:40 PM	48.9		HIGH
30-May-90	02:30 PM	48.9		HIGH
30-May-90	09:55 PM		36.5	LOW
31-May-90	05:13 AM		34.0	LOW
31-May-90	12:06 PM	59.2		HIGH
01-Jun-90	08:54 AM		25.6	LOW
01-Jun-90	12:35 PM	35.4		HIGH
02-Jun-90	02:29 AM		25.3	LOW
02-Jun-90	03:06 PM	59.0		HIGH
03-Jun-90	02:51 AM		40.9	LOW
03-Jun-90	03:09 PM	73.0		HIGH
04-Jun-90	01:33 AM		54.9	LOW
04-Jun-90	09:27 AM	69.1		HIGH
05-Jun-90	04:51 AM		47.9	LOW
05-Jun-90	12:52 PM	71.2		HIGH
06-Jun-90	02:01 PM	81.7		HIGH
06-Jun-90	07:29 PM		48.6	LOW
07-Jun-90	01:16 AM		44.5	LOW
07-Jun-90	11:54 AM	64.9		HIGH
08-Jun-90	12:58 AM		46.3	LOW
08-Jun-90	01:19 PM	71.3		HIGH
09-Jun-90	01:19 PM	76.3		HIGH
09-Jun-90	07:53 PM		50.8	LOW
10-Jun-90	02:22 AM		44.4	LOW
10-Jun-90	08:30 AM	60.3		HIGH
11-Jun-90	09:23 AM	53.3		HIGH
11-Jun-90	06:29 PM		35.1	LOW
12-Jun-90	12:28 AM		35.1	LOW
12-Jun-90	12:09 PM	51.7		HIGH
13-Jun-90	12:47 AM		34.9	LOW
13-Jun-90	02:09 PM	61.9		HIGH
14-Jun-90	12:51 AM		43.0	LOW
14-Jun-90	12:57 PM	66.7		HIGH
15-Jun-90	07:31 AM	57.0		HIGH
15-Jun-90	07:53 PM		34.9	LOW
16-Jun-90	12:00 AM		34.2	LOW
16-Jun-90	12:01 PM	53.5		HIGH
17-Jun-90	12:24 AM		38.0	LOW
17-Jun-90	01:26 PM	70.0		HIGH
18-Jun-90	01:13 AM		47.5	LOW
18-Jun-90	11:57 AM	73.0		HIGH

May-90 SUMMARY

	HIGH	LOW
AVG.	54.0	32.5
MAX.	68.7	44.3
MIN.	40.3	16.6

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
19-Jun-90	12:57 AM		44.8	LOW
19-Jun-90	12:16 PM	62.2		HIGH
20-Jun-90	12:15 AM		45.1	LOW
20-Jun-90	01:52 PM	72.6		HIGH
21-Jun-90	02:31 AM		50.3	LOW
21-Jun-90	01:06 PM	69.6		HIGH
22-Jun-90	01:42 AM		52.4	LOW
22-Jun-90	02:43 PM	81.6		HIGH
23-Jun-90	03:01 AM		57.3	LOW
23-Jun-90	01:25 PM	82.2		HIGH
24-Jun-90	02:03 AM		59.8	LOW
24-Jun-90	01:28 PM	80.6		HIGH
25-Jun-90	02:51 AM		60.9	LOW
25-Jun-90	02:01 PM	85.4		HIGH
26-Jun-90	02:26 AM		60.1	LOW
26-Jun-90	01:54 PM	85.7		HIGH
27-Jun-90	04:15 AM		59.3	LOW
27-Jun-90	02:30 PM	85.0		HIGH
28-Jun-90	04:14 AM		58.5	LOW
28-Jun-90	04:02 PM	84.9		HIGH
29-Jun-90	03:48 AM		58.0	LOW
29-Jun-90	03:11 PM	85.1		HIGH
30-Jun-90	04:21 AM		63.6	LOW
30-Jun-90	04:15 PM	78.2		HIGH
01-Jul-90	03:11 AM		60.3	LOW
01-Jul-90	02:02 PM	83.9		HIGH
02-Jul-90	09:36 AM	79.3		HIGH
02-Jul-90	09:03 PM		58.1	LOW
03-Jul-90	09:09 AM	66.5		HIGH
03-Jul-90	07:09 PM		49.2	LOW
04-Jul-90	02:18 AM		43.9	LOW
04-Jul-90	11:07 AM	73.0		HIGH
05-Jul-90	11:03 AM	76.6		HIGH
05-Jul-90	08:16 PM		46.6	LOW
06-Jul-90	01:48 AM		45.0	LOW
06-Jul-90	11:28 AM	72.5		HIGH
07-Jul-90	11:57 AM	62.9		HIGH
07-Jul-90	09:31 PM		44.9	LOW
08-Jul-90	11:24 AM	57.1		HIGH
08-Jul-90	09:52 PM		43.6	LOW
09-Jul-90	12:17 AM		43.0	LOW
09-Jul-90	12:20 PM	67.7		HIGH
10-Jul-90	12:54 AM		45.2	LOW
10-Jul-90	10:44 AM	69.1		HIGH
11-Jul-90	11:05 AM	77.0		HIGH
11-Jul-90	10:30 PM		54.6	LOW
12-Jul-90	02:09 AM		52.0	LOW
12-Jul-90	11:39 AM	77.9		HIGH
13-Jul-90	07:38 AM	74.1		HIGH
13-Jul-90	09:53 PM		53.8	LOW
14-Jul-90	10:34 AM	69.0		HIGH
14-Jul-90	11:01 AM		51.9	LOW

Jun-90 SUMMARY

	HIGH	LOW
AVG.	70.1	[illegible]7
MAX.	85.7	[illegible]6
MIN.	35.4	25.3

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
15-Jul-90	10:55 AM	67.8		HIGH
15-Jul-90	07:24 PM		46.5	LOW
16-Jul-90	02:04 AM		47.7	LOW
16-Jul-90	01:01 PM	74.8		HIGH
17-Jul-90	02:13 AM		51.6	LOW
17-Jul-90	12:40 PM	77.1		HIGH
18-Jul-90	09:32 AM	71.1		HIGH
18-Jul-90	08:42 PM		49.2	LOW
19-Jul-90	12:05 PM	71.2		HIGH
19-Jul-90	09:53 PM		46.7	LOW
20-Jul-90	12:32 PM	69.0		HIGH
20-Jul-90	02:55 PM		50.4	LOW
21-Jul-90	09:53 AM	64.2		HIGH
21-Jul-90	09:00 PM		47.9	LOW
22-Jul-90	01:02 AM		46.2	LOW
22-Jul-90	01:34 PM	69.0		HIGH
23-Jul-90	11:33 AM	75.0		HIGH
23-Jul-90	08:54 PM		42.8	LOW
24-Jul-90	01:25 AM		42.8	LOW
24-Jul-90	08:54 AM	62.2		HIGH
25-Jul-90	12:31 AM		43.7	LOW
25-Jul-90	12:17 PM	69.7		HIGH
26-Jul-90	03:17 AM		49.8	LOW
26-Jul-90	12:16 PM	69.1		HIGH
27-Jul-90	03:38 AM		49.9	LOW
27-Jul-90	02:01 PM	70.5		HIGH
28-Jul-90	02:13 PM	76.0		HIGH
28-Jul-90	09:11 PM		51.6	LOW
29-Jul-90	02:52 AM		50.2	LOW
29-Jul-90	11:09 AM	72.7		HIGH
30-Jul-90	11:54 AM	72.1		HIGH
30-Jul-90	07:55 PM		51.5	LOW
31-Jul-90	01:43 AM		50.5	LOW
31-Jul-90	01:35 PM	81.4		HIGH
01-Aug-90	03:59 AM		57.0	LOW
01-Aug-90	11:06 AM	76.6		HIGH
02-Aug-90	04:30 AM		55.4	LOW
02-Aug-90	04:28 PM	75.3		HIGH
03-Aug-90	04:12 AM		56.2	LOW
03-Aug-90	03:06 PM	74.0		HIGH
04-Aug-90	02:33 AM		55.5	LOW
04-Aug-90	04:19 PM	80.0		HIGH
05-Aug-90	05:52 AM		55.4	LOW
05-Aug-90	04:07 PM	76.8		HIGH
06-Aug-90	03:35 AM		55.4	LOW
06-Aug-90	03:44 PM	82.2		HIGH
07-Aug-90	05:31 AM		60.0	LOW
07-Aug-90	04:30 PM	83.5		HIGH
08-Aug-90	04:31 AM		63.7	LOW
08-Aug-90	03:30 PM	89.3		HIGH

Jul-90 SUMMARY

	HIGH	LOW
AVG.	71.6	48.8
MAX.	83.9	60.3
MIN.	57.1	42.8

Aug-90 SUMMARY

	HIGH	LOW
AVG.	79.7	57.3
MAX.	89.3	63.7
MIN.	74.0	55.4

HYDRO-THERMO GRAPH OUT OF ORDER
09-AUG-90 THROUGH 06-SEP-90

EAST MOUNTAIN STATION
1990 WATER YEAR

DATE	TIME	TEMPERATURE (DEG. F)		
07-Sep-90	01:50 PM	74.6		HIGH
07-Sep-90	08:48 PM		57.4	LOW
08-Sep-90	01:15 AM		56.1	LOW
08-Sep-90	10:47 AM	77.9		HIGH
09-Sep-90	08:32 AM	76.3		HIGH
09-Sep-90	04:36 PM		56.3	LOW
10-Sep-90	12:48 AM		55.8	LOW
10-Sep-90	11:25 AM	76.7		HIGH
11-Sep-90	01:14 AM		57.9	LOW
11-Sep-90	08:44 AM	82.1		HIGH
12-Sep-90	02:20 AM		59.1	LOW
12-Sep-90	11:12 AM	83.6		HIGH
13-Sep-90	01:33 AM		59.4	LOW
13-Sep-90	10:58 AM	83.1		HIGH
14-Sep-90	10:07 AM	85.4		HIGH
14-Sep-90	06:01 PM		59.1	LOW
15-Sep-90	10:32 AM	76.8		HIGH
15-Sep-90	07:18 PM		45.2	LOW
16-Sep-90	09:16 AM	55.4		HIGH
16-Sep-90	09:06 PM		41.5	LOW
17-Sep-90	12:47 AM		42.9	LOW
17-Sep-90	06:38 AM	61.9		HIGH
18-Sep-90	02:17 AM	46.9		HIGH
18-Sep-90	06:57 PM		34.4	LOW
19-Sep-90	03:47 AM	49.5		HIGH
19-Sep-90	08:38 PM		38.6	LOW
20-Sep-90	05:28 AM	56.3		HIGH
20-Sep-90	07:36 PM		37.8	LOW
21-Sep-90	08:05 AM	60.7		HIGH
21-Sep-90	07:36 PM		42.1	LOW
22-Sep-90	09:17 AM	65.4		HIGH
22-Sep-90	08:55 PM		44.9	LOW
23-Sep-90	07:27 AM	53.0		HIGH
23-Sep-90	07:09 PM		43.5	LOW
24-Sep-90	04:38 AM	57.1		HIGH
24-Sep-90	06:59 PM		44.8	LOW
25-Sep-90	04:39 AM	59.6		HIGH
25-Sep-90	08:10 PM		43.3	LOW
26-Sep-90	07:34 AM	61.1		HIGH
26-Sep-90	07:14 PM		42.6	LOW
27-Sep-90	05:18 AM	56.3		HIGH
27-Sep-90	06:55 PM		37.3	LOW
28-Sep-90	07:11 AM	51.6		HIGH
28-Sep-90	02:42 PM		33.6	LOW
29-Sep-90	07:53 AM	57.5		HIGH
29-Sep-90	07:47 PM		40.5	LOW
30-Sep-90	09:46 AM	60.3		HIGH
30-Sep-90	06:42 PM		44.0	LOW

Sep-90 SUMMARY

	HIGH	LOW
AVG.	68.5	48.9
MAX.	85.4	[illegible]4
MIN.	65.4	46.6

WELL DATA - SURFACE

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

SURFACE PIEZOMETRIC DATA

	Cottonwood Canyon(EM-31)	Rilda Canyon(EM-47)	P - 1	P - 2	P - 3	P - 4	P - 5	P - 6	P - 7
* Collar Elevation	7417.8	8045	7516.8	7612.7	7635.1	7579.3	7564.8	7615.5	7634.9
Date	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level
01-24-86	-41.1 7376.7	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
02-11-86	-40.9 7376.9	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
03-12-86	-40.6 7377.2	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
04-07-86	-40.6 7377.2	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
05-13-86	-40.7 7377.1	-190.9 7854.1							
JUNE-86	METER OUT OF SERVICE								
07-18-86		-200.7 7844.3	-23.3 7493.5	-38.4 7574.3	-22.6 7612.5	-18.5 7560.8	-7.0 7557.8		
07-24-86	-41.8 7376.0								
08-13-86	-41.8 7376.0								
08-14-86		-199.7 7845.3	-22.6 7494.2	-38.5 7574.2	-23.2 7611.9	-18.4 7560.9	-7.0 7557.8		
09-08-86	-40.8 7377.0								
09-19-86		-200.8 7844.2	-24.4 7492.4	-37.9 7574.8	-24.7 7610.4	-18.6 7560.7	-6.8 7558.0		
0-07-86		-204.6 7840.4	-23.5 7493.3	-37.8 7574.9	-28.9 7606.2	-19.2 7560.1	-7.4 7557.4		
-14-86	-40.6 7377.2								
-10-86		-206.4 7838.6	-22.4 7494.4	-38.8 7573.9	-31.3 7603.8	-18.1 7561.2	-7.0 7557.8		
11-14-86	-41.0 7376.8								
12-09-86	-40.6 7377.2	-205.8 7839.2	-21.8 7495.0	-38.5 7574.2	dry	-18.5 7560.8	-7.0 7557.8		
JAN-87	inaccessilbe	==========	==========	==========	==========	==========	==========	==========	==========
02-13-87	-40.8 7377.0	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
03-03-87	-40.8 7377.0	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
04-08-87	-40.6 7377.2	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
05-20-87		-206.5 7838.5	-22.8 7494.0	-40.5 7572.2	-25.5 7609.6	-18.5 7560.8	-6.8 7558.0		
05-21-87	-40.7 7377.1								
06-16-87	-40.8 7377.0	-204.8 7840.2	-22.8 7494.0	-39.0 7573.7	-23.8 7611.3	-14.4 7564.9	-5.9 7558.9		
07-15-87	-40.8 7377.0	-205.1 7839.9	-22.6 7494.2	-38.5 7574.2	-23.5 7611.6	-16.8 7562.5	-6.1 7558.7		
08-11-87	-40.9 7376.9								
08-18-87		-206.3 7838.7	-23.0 7493.8	-38.7 7574.0	-24.4 7610.7	-18.7 7560.6	-7.1 7557.7		
SEP-87									
09-22-87	-40.6 7377.2								
10-21-87	-40.1 7377.7								
OCT-87									
10-21-87	-40.1 7377.7								
NOV-87									
12-15-87	-40.4 7377.4								
DEC-87	inaccessilbe	==========	==========	==========	==========	==========	==========	==========	==========
JAN-88	inaccessilbe	==========	==========	==========	==========	==========	==========	==========	==========
02-12-88	-41.3 7376.5	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
03-23-88	-40.8 7377.0	inaccessilbe	==========	==========	==========	==========	==========	==========	==========
4-18-88	-40.8 7377.0	inaccessilbe	-22.8 7494.0	-40.8 7571.9	DRY	-19.0 7560.3	-7.0 7557.8		
-16-88	-40.8 7377.0	-211.5 7833.5	-22.5 7494.3	-41.0 7571.7	-33.8 7601.3	-18.7 7560.6	-7.1 7557.7		
JUNE	METER OUT OF SERVICE								
JULY	METER OUT OF SERVICE								
AUGUST	METER OUT OF SERVICE								

WELL DATA - SURFACE

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

SURFACE PIEZOMETRIC DATA

	Cottonwood Canyon(EM-31)	Rilda Canyon(EM-47)	P - 1	P - 2	P - 3	P - 4	P - 5	P - 6	P - 7
* Collar Elevation	7417.8	8045	7516.8	7612.7	7635.1	7579.3	7564.8	7615.5	7634.9
Date	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level	Reading Level
	CW-1004	Rilda	P1	P2	P3	P4	P5	P6?	P7?
09-13-88	-43.8 7374.0	-208.5 7836.5	-22.6 7494.2	-39.7 7573.0	DRY	-18.5 7560.8	-7.4 7557.4		
10-11-88	-43.8 7374.0	-210.5 7834.5	-22.5 7494.3	-39.2 7573.5	DRY	-18.8 7560.5	-7.8 7557.0		
10-12-88	-44.0 7373.8								
11-14-88	-42.8 7375.0								
11-16-88		DAMP	-23.1 7493.7	-38.8 7573.9	DRY	-19.3 7560.0	-7.2 7557.6		
12-15-88	-42.4 7375.4	inaccessilbe	==========	==========	==========	==========	==========		
01-31-89	-42.9 7374.9	inaccessilbe	==========	==========	==========	==========	==========		
02-27-89	-42.6 7375.2	inaccessilbe	==========	==========	==========	==========	==========		
03-13-89	-42.4 7375.4	inaccessilbe	-21.8 7495.0	inaccessilbe	==========)	-18.5 7560.8	-6.8 7558.0		
04-17-89	-42.5 7375.3	-218.7 7826.3	-22.8 7494.0	-42.2 7570.5	DRY	-18.8 7560.5	-7.7 7557.1		
05-09-89	-43.6 7374.2								
05-11-89		-210.0 7835.0	-23.0 7493.8	-42.0 7570.7	-25.2 7609.9	-18.9 7560.4	-7.2 7557.6		
06-12-89		-208.5 7836.5	-23.1 7493.7	-40.5 7572.2	-24.5 7610.6	-18.8 7560.5	-6.9 7557.9		
-19-89	-44.0 7373.8								
-15-89	-44.2 7373.6								
07-30-89		-209.5 7835.5	-22.6 7494.2	-40.0 7572.7	-30.6 7604.5	-18.8 7560.5	-7.0 7557.8		
08-15-89	-44.2 7373.6	-211.0 7834.0	-21.7 7495.1	-39.6 7573.1	-34.5 7600.6	-19.1 7560.2	-7.2 7557.6		
09-14-89	-44.0 7373.8								
09-12-89		-214.5 7830.5	-22.5 7494.3	-41.5 7571.2	DRY	-20.3 7559.0	-7.7 7557.1		
10-10-89	-44.2 7373.6								
10-12-89		-218.5 7826.5	-21.8 7495.0	-40.0 7572.7	DRY	-20.3 7559.0	-7.7 7557.1		
11-13-89		-218.5 7826.5	-20.7 7496.1	-40.5 7572.2	DRY	-20.0 7559.3	-8.7 7556.1		
11-14-89	-43.8 7374.0								
12-05-89	-43.9 7373.9								
12-06-89		inaccessible	-23.1 7493.7	-41.6 7571.1	DRY	-21.6 7557.7	-8.5 7556.3		
01-09-90	-45.1 7372.7								
01-10-90		inaccessible	==========	==========	) DRY	-20.0 7559.3	-8.1 7556.7		
FEB	inaccessilbe	==========	==========	==========	==========	==========	==========		
03-05-90	-46.1 7371.7	inaccessilbe	==========	==========	==========	==========	==========		
04-16-90	-47.3 7370.5								
04-19-90		-221.5 7823.5	-22.5 7494.3	-42.2 7570.5	DRY	-20.2 7559.1	-7.8 7557.0		
05-10-90	-46.1 7371.7	-221.2 7823.8	-22.6 7494.2	-42.1 7570.6	DRY	-20.4 7558.9	-8.5 7556.3		
06-06-90	-47.9 7369.9		-22.5 7494.3	-42.2 7570.5	DRY	-20.2 7559.1	-7.8 7557.0		
06-13-90		-208.5 7836.5	-22.6 7494.2	-40.4 7572.3	-24.5 7610.6	-20.8 7558.5	-7.5 7557.3		
07-11-90	-48.0 7369.8	-204.5 7840.5	-22.5 7494.3	-42.8 7569.9	-26.3 7608.8	-21.3 7558.0	-7.6 7557.2		
08-13-90	-50.2 7367.6	-206.2 7838.8	-21.8 7495.0	-39.4 7573.3	-28.7 7606.4	-20.9 7558.4	-8.1 7556.7		
09-06-90		-210.2 7834.8	-22.2 7494.6	-39.8 7572.9	DRY	-19.8 7559.5	-6.8 7558.0		
09-07-90	-50.4 7367.4								
1-08-90	-50.1 7367.7								
-24-90		-214.9 7830.1	-22.5 7494.3	-40.3 7572.4	DRY	-20.9 7558.4	-7.9 7556.9		
11-07-90		-216.8 7828.2	-22.6 7494.2	-40.5 7572.2	DRY	-21.0 7558.3	-8.0 7556.8		
11-12-90	-50.4 7367.4								
12-14-90		inaccessilbe	-22.2 7494.6	-40.5 7572.2	DRY	-21.3 7558.0	-8.0 7556.8	-48.25 7567.3	-47.35 7587.5

WELL DATA - SURFACE

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

SURFACE PIEZOMETRIC DATA

	Cottonwood Canyon(EM-31)		Rilda Canyon(EM-47)		P - 1		P - 2		P - 3		P - 4		P - 5		P - 6		P - 7	
* Collar Elevation	7417.8		8045		7516.8		7612.7		7635.1		7579.3		7564.8		7615.5		7634.9	
Date	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level
12-17-90	-50.3	7367.5																

* Elevations corrected, surveyed August 27,1987.
** Readings cancelled due to Rilda Canyon bridge failure & replacement.

DEER CREEK IN - MINE WELLS

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK IN -MINE PIEZOMETRIC DATA

	DCP - 1 3rd N. xc-8		DCP - 2 3rd N. xc-29		DCP - 3 3rd N. xc-55		DCP - 4 1st WM xc-29	
Elevation	7530		7567		7577		7529	
DRILL DEPTH	155.4		170.5		148.9		169.6	
Date	Reading	Level	Reading	Level	Reading	Level	Reading	Level
12-20-89	0.2	7530.2	-35.5	7531.5	-56.3	7520.2	1.7	7529.7
03-16-90	0.0	7530.0	-36.8	7530.2	-59.6	7516.9	1.2	7529.5
07-18-90	0.0	7530.0	-37.8	7529.2	-53.9	7522.6	0.4	7529.2
11-05-90	-4.6	7525.4	-38.0	7529.0	-63.5	7513.0	-5.0	7524.0
12-19-90	-5.4	7524.6	-36.9	7530.1	-60.6	7515.9	-4.9	7524.1

COTTONWOOD\WILBERG IN - MINE WELLS

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD\WILBERG IN -MINE PIEZOMETRIC DATA

	WCP - 1 5th W. xc-16		WCP - 2 3rd S. xc-14		WCP - 3 3rd S. xc-44		WCP - 4 9th E. xc-19	
Elevation	7597		7578		7610		7645	
DRILL DEPTH	145.4		69.6		80.8		74.6	
Date	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level
06-08-89	118.7	7570.3	61.1	7569.5	19.3	7548.5	25.7	7596.1
06-15-89	119.4	7571.0	62.4	7570.8	19.3	7548.5	26.2	7596.6
06-22-89	119.8	7571.4	62.1	7570.5	19.1	7548.3	26.0	7596.4
06-28-89	119.1	7570.7	61.5	7569.9	18.8	7548.0	26.0	7596.4
07-06-89	119.8	7571.4	61.6	7570.0	18.2	7547.4	25.5	7595.9
07-12-89	119.8	7571.4	61.6	7570.0	19.3	7548.5	26.4	7596.8
07-19-89	118.7	7570.3	61.0	7569.4	18.5	7547.7	25.5	7595.9
07-26-89	119.2	7570.8	61.4	7569.8	18.8	7548.0	26.1	7596.5
08-02-89	120.4	7572.0	61.6	7570.0	19.1	7548.3	26.5	7596.9
08-09-89	120.7	7572.3	61.7	7570.1	19.3	7548.5	26.7	7597.1
08-16-89	121.4	7573.0	61.4	7569.8	18.3	7547.5	26.4	7596.8
08-23-89	121.8	7573.4	61.5	7569.9	19.1	7548.3	26.4	7596.8
08-31-89	121.8	7573.4	61.5	7569.9	19.1	7548.3	26.4	7596.8
09-06-89	120.8	7572.4	61.8	7570.2	18.9	7548.1	26.7	7597.1
09-15-89	120.1	7571.7	61.8	7570.2	19.3	7548.5	27.5	7597.9
09-19-89	119.3	7570.9	61.6	7570.0	19.6	7548.8	27.1	7597.5
09-26-89	118.8	7570.4	61.4	7569.8	19.3	7548.5	26.9	7597.3
10-04-89	118.8	7570.4	61.6	7570.0	19.5	7548.7	27.4	7597.8
10-10-89	118.8	7570.4	61.7	7570.1	19.4	7548.6	27.6	7598.0
10-17-89	117.9	7569.5	61.2	7569.6	19.6	7548.8	27.7	7598.1
10-29-89	117.5	7569.1	60.9	7569.3	19.5	7548.7	inaccessible	
11-06-90	118.1	7569.7	61.1	7569.5	19.4	7548.6		
11-20-89	118.2	7569.8	61.3	7569.7	19.7	7548.9		
11-30-89	118.7	7570.3	61.3	7569.7	19.5	7548.7		
12-06-89	119.4	7571.0	61.8	7570.2	19.7	7548.9		
12-14-89	119.4	7571.0	61.6	7570.0	19.8	7549.0		
12-20-89	119.0	7570.6	61.7	7570.1	19.9	7549.1		
12-27-89	119.3	7570.9	61.9	7570.3	19.9	7549.1		
01-03-90	119.2	7570.8	62.1	7570.5	20.4	7549.6		
01-10-90	118.7	7570.3	61.6	7570.0	19.9	7549.1		
01-17-90	118.6	7570.2	61.8	7570.2	19.7	7548.9		
01-24-90	118.1	7569.7	61.5	7569.9	19.8	7549.0		
01-31-90	118.6	7570.2	62.3	7570.7	20.0	7549.2		
02-07-90	118.2	7569.8	61.8	7570.2	19.8	7549.0		
02-15-90	118.3	7569.9	62.1	7570.5	20.4	7549.6		
02-21-90	118.2	7569.8	61.5	7569.9	19.8	7549.0		
02-27-90*	109.4	7561.0	61.3	7569.7	19.6	7548.8		
03-07-90	108.9	7560.5	61.5	7569.9	20.1	7549.3		
03-14-90	109.6	7561.2	62.0	7570.4	19.8	7549.0		
03-21-90	109.5	7561.1	61.6	7570.0	19.8	7549.0		

COTTONWOOD\WILBERG IN - MINE WELLS

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD\WILBERG IN -MINE PIEZOMETRIC DATA

	WCP - 1 5th W. xc-16		WCP - 2 3rd S. xc-14		WCP - 3 3rd S. xc-44		WCP - 4 9th E. xc-19	
Elevation	7597		7578		7610		7645	
DRILL DEPTH	145.4		69.6		80.8		74.6	
Date	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level
03-29-90	109.1	7560.7	61.7	7570.1	20.2	7549.4		
04-03-90	109.2		61.3		19.8			
04-10-90	108.9		61.2		20.3			
04-17-90	109.3		61.8		20.9			
04-24-90	108.9		61.3		21.0			
05-01-90	109.0		62.0		20.7			
05-08-90	109.1		62.1		20.8			
05-16-90	108.8		61.7		20.2			
05-23-90	109.0		62.1		20.4			
05-30-90	108.8		62.0		20.7			
06-06-90	108.6		61.8		20.0			
06-13-90	108.1		61.6		20.1			
06-21-90	107.9		61.4		19.6			
07-13-90	107.5		60.9		19.9			
07-20-90	107.0		61.7		20.3			
07-26-90	107.6		61.2		19.9			
08-02-90	107.8		61.5		20.4			
08-12-90	108.0		61.3		20.3			
08-21-90	106.4		60.0		19.7			
08-27-90	106.3		61.0		19.8			
09-03-90	106.2		61.0		19.7			
09-10-90	106.2		61.0		19.5			
10-17-90	106.5		60.7		20.6			
10-22-90	106.0		60.5		19.7			

* well #1 recalibrated

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING
WASTE ROCK DISPOSAL WELLS DATA

DEER CREEK WR1			WILBERG\COTTONWOOD WCWR1		
* Collar Elevation	6313.4	Elevations Adjusted 12/90		6774.5	
Date	Reading	Level	Date	Reading	Level
05-19-89	-5.4	6308.0	12-05-89	-59.5	6715.0
08-25-89	-5.9	6307.5	03-06-90	-60.0	6714.5
09-21-89	-5.9	6307.5	06-06-90	-59.6	6714.9
12-06-89	-5.1	6308.3	09-24-90	-58.9	6715.6
03-06-90	-4.4	6309.0	12-17-90	-59.2	6715.3
06-13-90	-5.2	6308.2			
09-25-90	-4.0	6309.4			
12-14-90	-4.9	6308.5			

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK

Date	Time	Temp.	Field Measurements: Flow ft.	Flow GPM	pH	Cond. (uS)	Dissolved Oxygen	Weather
24-Jan-86	1050	32	1.10	1,593				clear 20's
11-Feb-86	1000	34	0.95	1,248				PC 20's
12-Mar-86	1100	35	0.90	1,172				cloudy 30's
07-Apr-86	1310	44	0.95	1,248				PC 50's
13-May-86	1445	52	1.20	1,822				clear 60's
10-Jun-86	1150	56	1.50	2,563				PC 60's
24-Jul-86	1120	52	0.91	1,194				PC 60's
13-Aug-86	830	50	0.83	1,037				clear 60's
08-Sep-86	900	48	0.83	1,037				PC 50's
14-Oct-86	1000	39	0.79	961				clear 50's
14-Nov-86	1400	38	0.78	943				clear 50's
09-Dec-86	1100	34	0.80	977				PC 20's
13-Jan-87	1515	34	0.79	961				cloudy 30's
24-Feb-87	900	38	0.80	977				cloudy 30's
17-Mar-87	1340	42	0.77	925				PC 30's
08-Apr-87	900	41	0.75	889				PC 40's
21-May-87	1035	44	0.85	1,075	8.27	486	14.2	rain 50's
16-Jun-87	1450	62	0.85	1,075	8.2	482.4	13.05	clear 80's
15-Jul-87	934	50	0.75	889	8.66	528	11.5	clear 80's
11-Aug-87	1235	59	0.66	730	7.1	528	10.67	clear 70's
17-Sep-87	1510	57	0.63	680	8.9	537	*	clear 70's
21-Oct-87	1310	48	0.59	615	6.98	516	*	clear 60's
17-Nov-87	920	32	0.60	631	7.09	581	*	snow 20's
15-Dec-87	1014	33	0.52	507	7.99	655	*	PC 20'S
19-Jan-88	1000	Frozen over - inaccessible						PC 10'S
12-Feb-88	1220	34	0.71	816	8.15	582	*	PC 20'S
23-Mar-88	1130	35	0.60	631	7.74	506	*	cloudy 40's
18-Apr-88	915	43	0.65	713	7.95	434	*	rain 40's
16-May-88	900	52	0.92	1,213	7.51	422	*	clear 60's
07-Jun-88	1255	50	0.66	730	7.98	526	*	clear 70's
14-Jul-88	1055	62	0.58	599	*	*	*	PC 80's
15-Aug-88	1405	64	0.56	547	*	*	*	PC 80's
13-Sep-88	1440	48	0.60	631	7.01	502	10.22	snow 30's
12-Oct-88	1039	46	0.59	615	7.74	465	11.56	rain 40's
14-Nov-88	1255	41	0.61	647	7.26	490	9.28	cloudy 30's
15-Dec-88	1300	37	0.55	552	7.81	562	10.38	cloudy 10's
31-Jan-89	1345	34	0.55	552	8.2	580	8.5	PC 20's
27-Feb-89	1330	38	0.56	547	8	476	8.1	PC 40's
30-Mar-89	1430	46	0.58	599	7.82	553	10.3	PC 30's
17-Apr-89	1520	60	0.60	631	7.96	413	9.8	PC 60's
11-May-89	930	64	0.55	552	8.01	572	7.9	PC 60's
19-Jun-89	1550	64	0.55	552	7.94	611	7.82	PC 80's
19-Jul-89	930	68	0.52	507	8.03	431	9.16	PC 80's
15-Aug-89	1450	64	0.58	599	8.5	710	6.6	PC 70's
12-Sep-89	1415	54	0.56	547	7.95	670	7.86	rain 40's

COTTONWOOD CANYON CREEK - USGS FLUME

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK

	<---------- Field Measurements ---------->							
			Flow			Cond.	Dissolved	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Oxygen	Weather
10-Oct-89	955	39	0.57	583	7.77	562	13.1	PC 60's
14-Nov-89	1455	38	0.51	492	7.68	521	8.35	clear 40's
05-Dec-89	1126	34	0.50	477	7.88	499	6.8	clear 30's
09-Jan-90	1320	36	0.40	339	7.99	455	8.8	PC 40's
19-Feb-90	1230	34	0.40	339	7.98	525	8.1	cloudy 30's
05-Mar-90	1435	36	0.45	406	7.69	538	6.8	snow 30's
16-Apr-90	945	44	0.35	276	7.67	604	7.2	PC 40's
10-May-90	1305	54	0.40	339	8.2	535	7.76	clear 60's
06-Jun-90	1200	58	0.30	218	7.68	566	7.8	clear 80's
11-Jul-90	930	66	0.30	218	7.77	584	7.27	PC 90's
13-Aug-90	1130	68	0.20	117.4	7.34	570	5.9	rain 70's
07-Sep-90	1310	68		80	7.88	512	7.2	PC 80's
08-Oct-90	1040	41		40	8.1	612	7.1	PC 30's
12-Nov-90	1400	39		40	8.13	617	6.9	PC 30's
17-Dec-90	1425	39		20	7.98	621	*	PC 20's

* meter out of service

DEER CREEK RUNOFF

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

ABOVE THE MINE

	<------ Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
13-Jan-86	1055	32	<5.0				cloudy 20's
12-Feb-86	1500	33	0.1	12.6			snow 20's
11-Mar-86	1330	36	0.1	12.6			cloudy 30's
09-Apr-86	1000	35	0.27	58.8			cloudy 40's
13-May-86	1000	38	1.7	1020			clear 50's
11-Jun-86	900	44	1.7	1020			clear 60's
07-Jul-86	1010	47	0.89	371.6			cloudy 70's
13-Aug-86	1120	51	0.42	116.7			PC 70's
19-Sep-86	945	46	0.23	45.8			PC 50's
17-Oct-86	1055	32	0.22	42.6			PC 40's
10-Nov-86	1150	31	0.1	12.6	6.9	594	clear 30's
12-Dec-86	1300		no flow				PC 20's
13-Jan-87	900		no flow				cloudy 30's
13-Feb-87	930	33	0.1	12.6	*	*	clear 20's
17-Mar-87	1030	38	0.1	12.6	*	*	snow 20's
08-Apr-87	1039	38	-	25 es	7.58	1220	clear 40's
20-May-87	1420	42	1.6	921.2	8.33	418.8	rain 50's
16-Jun-87	1220	48	1.2	590.3	8.33	401.2	clear 70's
16-Jul-87	1000	49	0.64	223.1	7.9	471.6	clear 80's
18-Aug-87	1145	48	0.34	83.9	7.99	497	clear 70's
22-Sep-87	1020	48	0.22	42.6	8.7	553	clear 70's
21-Oct-87	1025	34	0.18	31.4	7.52	608	clear 40's
10-Nov-87	1050	36	0.34	83.9	7.83	687	cloudy 30's
10-Dec-87	1120	34	-	10	7.9	908	PC 10's
21-Jan-88	1420	32	0.1	12.6	7.57	1519	clear 20's
12-Feb-88	1100	34	0.1	12.6	7.93	1140	PC 20's
23-Mar-88	1030		frozen - no flow				cloudy 40's
18-Apr-88	1325	41	0.69	250.4	8.38	425	rain 40's
16-May-88	1530	44	-	1200 e	8.15	376	PC 70'S
07-Jun-88	1100	42	1.6	921.2	8.22	434	clear 70's
14-Jul-88	1220	62	0.65	228.5	*	*	clear 90's
16-Aug-88	935	58	0.32	76.3	*	*	clear 80's
14-Sep-88	1550	54	0.27	58.8	7.32	538	snow 30's
17-Oct-88	1130	38	0.24	48.9	6.94	548	clear 50's
16-Nov-88	1030		frozen - no flow				cloudy 30's
15-Dec-88	1015		frozen - no flow				cloudy 10's
31-Jan-89	915		frozen - no flow				PC 30's
27-Feb-89	1045		frozen - no flow				PC 30's
30-Mar-89	945		dry				PC 30's
17-Apr-89	1030		dry				PC 60's
19-May-89	1600		dry				PC 60'S
19-Jun-89	830		dry				PC 70'S
19-Jul-89	1230		dry				PC 80'S
15-Aug-89	1000		dry				PC 70'S
14-Sep-89	1150		dry				clear 60's

DEER CREEK RUNOFF

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

ABOVE THE MINE

Date	Time	Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
12-Oct-89	1330		dry				PC 50's
13-Nov-89	1240		dry				PC 40's
06-Dec-89	1230		dry				clear 30's
10-Jan-90	1325		dry				PC 40's
20-Feb-90	1100		dry				PC 30's
05-Mar-90	900		dry				PC 30's
19-Apr-90	1020		dry				PC 60's
10-May-90	940		dry				clear 50's
13-Jun-90	1430		dry				clear 80's
11-Jul-90	1245		dry				PC 80's
13-Aug-90	1305		dry				rain 70's
06-Sep-90	1420		dry				PC 60's
08-Oct-90	1340		dry				PC 30's
20-Nov-90	1600		dry				snow 20's
05-Dec-90	830		dry				PC 10's

DEER CREEK RUNOFF

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

@ PERMIT BOUNDARY

	<------ Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
13-Jan-86	1115		no flow				cloudy 20's
12-Feb-86	1430	33	0.1	12.6			snow 20's
11-Mar-86	1345	37	0.1	12.6			cloudy 30's
09-Apr-86	1020	43	0.27	58.8			cloudy 40's
13-May-86	950	39	1.7	833.7			clear 50's
11-Jun-86	910	45	1.7	833.7			clear 60's
07-Jul-86	1030	49	0.9	378.4			cloudy 70's
13-Aug-86	1135	58	0.45	129.7			PC 70's
19-Sep-86	1000	42	0.28	61.9			PC 50's
17-Oct-86	1100	38	0.3	69.1			PC 40's
10-Nov-86	1225	32	0.1	12.6			clear 30's
12-Dec-86	1320	39	0.93	398.1**			PC 20's
13-Jan-87	930						cloudy 30's
13-Feb-87	950	42	-	670**			clear 20's
17-Mar-87	1045	40	0.15	23.8			snow 20's
08-Apr-87	1130	38	-	35 est			clear 40's
20-May-87	1440	44	1.6	921.2	8.32	684.5	rain 50's
16-Jun-87	1240	53	1.2	590.3	*	529.1	clear 70's
16-Jul-87	1029	53	0.73	273.8	8.46	660.3	clear 80's
18-Aug-87	1220	50	0.5	152.2	8.31	985	clear 70's
22-Sep-87	1040	58	0.24	48.9	8.8	905	clear 70's
21-Oct-87	1035	42	0.18	31.4	7.79	1228	clear 40's
10-Nov-87	1100	40	0.36	92	7.89	1221	cloudy 30's
10-Dec-87	1140		no flow				PC 10's
21-Jan-88	1435		no flow				clear 20's
12-Feb-88	1115		no flow				PC 20's
23-Mar-88	1045		no flow				cloudy 40's
18-Apr-88	1400	40	0.8	315.1	8.27	1382	rain 40's
16-May-88	1620	46	-	1200es	8.16	474	PC 70'S
07-Jun-88	1150	47	1.6	921	8.42	324	clear 70's
14-Jul-88	1230	66	0.65	228	*	*	clear 90's
16-Aug-88	1000	64	0.3	69.1	*	*	clear 80's
14-Sep-88	1600	53		1400**	7.83	1006	snow 30's
17-Oct-88	1120	40	0.24	48.9	6.8	853	clear 50's
16-Nov-88	1045	31	0.02	1.04	7.08	972	cloudy 30's
15-Dec-88	1025		frozen - no flow				cloudy 10's
31-Jan-89	930		frozen - no flow				PC 30's
27-Feb-89	1100		frozen - no flow				PC 30's
30-Mar-89	950		dry				PC 30's
17-Apr-89	1020		dry				PC 60's
19-May-89	1610		dry				PC 60'S
19-Jun-89	840		dry				PC 70'S
19-Jul-89	1235		dry				PC 80'S
15-Aug-89	1005		dry				PC 70'S
14-Sep-89	1210		dry				clear 60's

DEER CREEK RUNOFF

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

@ PERMIT BOUNDARY

	<------ Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
12-Oct-89	1335		dry				PC 50's
13-Nov-89	1245		dry				PC 40's
06-Dec-89	1235		dry				clear 30's
10-Jan-90	1330		dry				PC 40's
20-Feb-90	1105		dry				PC 30's
05-Mar-90	905		dry				PC 30's
19-Apr-90	1035	42	0.32	76.3	7.31	2206	PC 60's
10-May-90	1030	45	-	2.5	7.15	2025	clear 50's
13-Jun-90	1310	57	0.21	39.9	8.03	1462	clear 80's
11-Jul-90	1250	68	0.11	14.8	7.92	1321	PC 80's
13-Aug-90	1340	63		5.0	8.18	2205	rain 70's
06-Sep-90	1250	64		8.9	7.48	1935	PC 60's
08-Oct-90	1420	46		12.0	7.6	1285	PC 30's
20-Nov-90	1620			dry			snow 20's
05-Dec-90	840			dry			PC 10's

* meter out of service
** includes sediment pond discharge

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

BELOW THE MINE

Date	Time	Temp.	Field Measurements Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
13-Jan-86	1125		no flow				cloudy 20's
12-Feb-86	1415	33	0.1	12.6			snow 20's
11-Mar-86	1400		no flow				cloudy 30's
09-Apr-86	1030	44	0.27	58.8			cloudy 40's
13-May-86	940	41	1.7	833.7			clear 50's
11-Jun-86	920	49	1.7	833.7			clear 60's
07-Jul-86	1035	58	0.85	352.8			cloudy 70's
13-Aug-86	1050	62	0.48	143.2			PC 70's
19-Sep-86	1015	44	0.28	61.9			PC 50's
17-Oct-86	1135	45		55			PC 40's
10-Nov-86	1245	31	0.1	12.6	7.8	1572	clear 30's
12-Dec-86	1345	42	0.98	431.3**			PC 20's
13-Jan-87	945		no flow				cloudy 30's
13-Feb-87	1010	40	-	670**			clear 20's
17-Mar-87	1100	42	0.15	23.8			snow 20's
08-Apr-87	1130	50.4	-	35est	7.81	2284	clear 40's
20-May-87	1450	50	-	1200es	8.13	827.5	rain 50's
16-Jun-87	1255	64	1.2	590.3	8.19	708.6	clear 70's
16-Jul-87	1040	64	0.71	262.1	8.5	910.3	clear 80's
18-Aug-87	1240	66	0.5	152.2	8.26	1365	clear 70's
22-Sep-87	1050	64	0.24	48.9	7.42	1462	clear 70's
21-Oct-87	1045	48	0.18	31.4	7.95	1625	clear 40's
10-Nov-87	1110	48	0.36	92	8.03	1562	cloudy 30's
10-Dec-87	1200		no flow				PC 10's
21-Jan-88	1445		no flow				clear 20's
12-Feb-88	1125		no flow				PC 20's
23-Mar-88	1100		no flow				cloudy 40's
18-Apr-88	1420	46	0.85	352.8	8.33	1114	rain 40's
16-May-88	1630	46	-	1200es	8.19	612	PC 70'S
07-Jun-88	1210	58	1.6	921	8.18	678	clear 70's
14-Jul-88	1240	68	0.65	228	*	*	clear 90's
16-Aug-88	1010	69	0.27	58.8	*	*	clear 80's
14-Sep-88	1620	56		1400**	8.05	1061	snow 30's
17-Oct-88	1130	46	0.25	52.5	6.7	954	clear 50's
16-Nov-88	1100	32	0.04	3.06	7.44	1816	cloudy 30's
15-Dec-88	1035		frozen - no flow				cloudy 10's
31-Jan-89	940		frozen - no flow				PC 30's
27-Feb-89	1105		frozen - no flow				PC 30's
30-Mar-89	1015		dry				PC 30's
17-Apr-89	1015		dry				PC 60's
19-May-89	1615		dry				PC 60'S
19-Jun-89	845		dry				PC 70'S
19-Jul-89	1240		dry				PC 80'S
15-Aug-89	1010		dry				PC 70'S
14-Sep-89	1215		dry				clear 60's

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

BELOW THE MINE

	<------ Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
12-Oct-89	1345		dry				PC 50's
13-Nov-89	1300		dry				PC 40's
06-Dec-89	1240		dry				clear 30's
10-Jan-90	1340		dry				PC 40's
20-Feb-90	1115		dry				PC 30's
05-Mar-90	915		dry				PC 30's
19-Apr-90	1045	44	0.2	36.8	7.5	2406	PC 60's
10-May-90	1037		damp				clear 50's
13-Jun-90	1452	74	-	12.0	8.03	2425	clear 80's
11-Jul-90	1300		damp				PC 80's
13-Aug-90	1350		damp				rain 70's
06-Sep-90	1300		damp				PC 60's
08-Oct-90	1425		damp				PC 30's
20-Nov-90	1625		dry				snow 20's
05-Dec-90	845		dry				PC 10's

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

RIGHT FORK

Date	Time	Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
		<----- Field Measurements ------->					
08-Jan-86	1500		no flow				clear 30's
11-Feb-86	1100		no flow				PC 20's
12-Mar-86	1050		no flow				cloudy 30's
07-Apr-86	1410	48	0.1	12.5			PC 50's
13-May-86	1530	54	0.18	31.4			clear 60's
10-Jun-86	1320	48	0.17	28.7			PC 60's
08-Jul-86	1330	61	0.1	12.6			PC 80's
13-Aug-86	940	52	0.09	10.7			PC 70's
08-Sep-86	1150	54	0.02	1.04			PC 60's
17-Oct-86	1000	38	0.03	1.96			PC 40's
13-Nov-86	1330		no flow				clear 40's
09-Dec-86	1145		no flow				PC 20's
09-Jan-87	1000		no flow				PC 20's
13-Feb-87	1250		no flow				clear 20's
18-Mar-87	1300		no flow				PC 20's
08-Apr-87	1355	35.3	2250est		8.11	147	PC 50's
21-May-87	1125	43.5	-	1	8.22	547	rain 50's
16-Jun-87	1550	-	no flow				clear 80's
15-Jul-87	1000	-	no flow				clear 80's
11-Aug-87	1300	-	no flow				clear 70's
17-Sep-87	1350	-	no flow				clear 70's
21-Oct-87	1115	-	no flow				clear 50's
17-Nov-87	1000	-	no flow				snow 20's
15-Dec-87	1430	-	no flow				PC 20's
21-Jan-88	1300	-	no flow				PC 10's
12-Feb-88	1300	-	no flow				PC 20's
23-Mar-88	1235	36	0.4	108.2	7.21	201	cloudy 40's
18-Apr-88	1025	46	0.1	12.6	8.18	375	rain 40's
16-May-88	1120	-	no flow				PC 60's
07-Jun-88	1335	-	no flow				clear 70's
14-Jul-88	1130	-	no flow				PC 80's
15-Aug-88	1425	-	no flow				PC 80's
13-Sep-88	1325	-	no flow				rain 40's
12-Oct-88	1030	-	no flow				rain 40's
14-Nov-88	1330	-	no flow				cloudy 30's
15-Dec-88	1345	-	no flow				cloudy 10's
31-Jan-89	1120	-	no flow				PC 30'S
27-Feb-89	1330	-	no flow				PC 30'S
30-Mar-89	1310	-	no flow				PC 30'S
17-Apr-89	1400	-	no flow				PC 60'S
19-May-89	1030	-	no flow				PC 60'S
19-Jun-89	1005	-	no flow				PC 70'S
19-Jul-89	1000	-	no flow				PC 80'S
16-Aug-89	1450	-	no flow				cloudy 70's
12-Sep-89	1350	-	no flow				rain 40's

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

RIGHT FORK

Date	Time	Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
10-Oct-89	1015	-	no flow				PC 60's
14-Nov-89	1355	-	no flow				clear 40's
15-Dec-89	1305	-	no flow				clear 30's
09-Jan-90	1510	-	no flow				PC 40's
19-Feb-90	1310	-	no flow				cloudy 30's
05-Mar-90	1455	-	no flow				rain 30's
16-Apr-90	1230	-	no flow				PC 60's
10-May-90	1348	-	no flow				clear 80's
06-Jun-90	955	-	no flow				clear 80's
11-Jul-90	1015	-	no flow				PC 80's
13-Aug-90	1150	-	no flow				rain 70's
07-Sep-90	1120	-	no flow				PC 80'S
08-Oct-90	1130	-	no flow				PC 30'S
12-Nov-90	1145	-	no flow				PC 30'S
17-Dec-90	1140	-	no flow				PC 20'S

* meter out of service

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

LEFT FORK

Date	Time	Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
08-Jan-86	1520	33	0.01	0.35			clear 30's
11-Feb-86	1045		no flow				PC 20's
12-Mar-86	1115	39	0.05	8.3			cloudy 30's
07-Apr-86	1420	49	0.15	44.9			PC 50's
13-May-86	1515	48	0.43	242.4			clear 60's
10-Jun-86	1305	46	0.37	188.5			PC 60's
08-Jul-86	1340	58	0.24	98.7			PC 80's
13-Aug-86	930	50	0.17	53.9			PC 70's
08-Sep-86	1140	59	0.11	26.9			PC 60's
17-Oct-86	900	36	0.1	22.4			PC 40's
13-Nov-86	1330	38	0.05	8.3	8.01	453	clear 40's
09-Dec-86	1130	36	0.01	0.35	*	*	PC 20's
09-Jan-87	1010		no flow				PC 20's
13-Feb-87	1305		no flow				clear 20's
18-Mar-87	1330	no flow					PC 20's
08-Apr-87	1330	51.6	0.2	71.8	7.74	337	PC 50's
21-May-87	1100	44	-	88.4	8.26	508.8	rain 50's
16-Jun-87	1540	53	-	42.6	8.1	473.7	clear 80's
15-Jul-87	1008	55	-	51.1	8.12	550.6	clear 80's
11-Aug-87	1315	62	0.11	28.3	8.33	558	clear 70's
17-Sep-87	1400	66	0.06	5.7	8.56	619	clear 70's
21-Oct-87	1120		no flow				clear 50's
17-Nov-87	950		no flow				snow 20's
15-Dec-87	1420		no flow				PC 20's
21-Jan-88	1330		no flow				PC 10's
12-Feb-88	1330		no flow				PC 20's
23-Mar-88	1220		no flow				cloudy 40's
18-Apr-88	1100	49	0.12	32.4	8.07	456	rain 40's
16-May-88	1115	60	0.22	84.5	7.83	1055	PC 60's
07-Jun-88	1340	56	0.2	72.7	8.45	559	clear 70's
14-Jul-88	1115	61	0.16	51.1	*	*	PC 80's
15-Aug-88	1430	68	0.1	24.3	*	*	PC 80's
13-Sep-88	1330	-	damp				rain 40's
12-Oct-88	1045	-	damp				rain 40's
14-Nov-88	1345	-	damp				cloudy 30's
15-Dec-88	1350	-	no flow				cloudy 10's
31-Jan-89	1115	-	no flow				PC 30'S
27-Feb-89	1335	-	no flow				PC 30'S
30-Mar-89	1320	-	no flow				PC 30'S
17-Apr-89	1350	-	no flow				PC 60'S
19-May-89	1040	-	no flow				PC 60'S
19-Jun-89	1010	-	no flow				PC 70'S
19-Jul-89	1010	-	no flow				PC 80'S
16-Aug-89	1500	-	no flow				cloudy 70's
12-Sep-89	1355	-	no flow				rain 40's

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

LEFT FORK

Date	Time	Field Measurements Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
10-Oct-89	1020	-	no flow				PC 60's
14-Nov-89	1400	-	no flow				clear 40's
15-Dec-89	1310	-	no flow				clear 30's
09-Jan-90	1515	-	no flow				PC 40's
19-Feb-90	1315	-	no flow				cloudy 30's
05-Mar-90	1500	-	no flow				rain 30's
16-Apr-90	1240	-	no flow				PC 60's
10-May-90	1350	-	no flow				clear 80's
06-Jun-90	1000	-	no flow				clear 80's
11-Jul-90	1020	-	no flow				PC 80's
13-Aug-90	1155	-	no flow				rain 70's
07-Sep-90	1125	-	no flow				PC 80'S
08-Oct-90	1125	-	no flow				PC 30'S
12-Nov-90	1155	-	no flow				PC 30'S
17-Dec-90	1150	-	no flow				PC 20'S

* meter out of service

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

BELOW THE MINE

Date	Time	Temp.	Field Measurements Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
08-Jan-86	1630	33		5-10			clear 30's
11-Feb-86	1005	33		10-15			PC 20's
12-Mar-86	1130	38		10-15			cloudy 30's
07-Apr-86	1430	47		65			PC 50's
13-May-86	1615	48		280			clear 60's
10-Jun-86	1300	48		225			PC 60's
08-Jul-86	1350	54		110			PC 80's
13-Aug-86	915	52		70			PC 70's
08-Sep-86	1040	52		30			PC 60's
17-Oct-86	1005	44		40			PC 40's
13-Nov-86	1400	40.1		60*	6.10	1618	clear 40's
09-Dec-86	1200	36		55*	*	*	PC 20's
09-Jan-87	1030	34		35*	*	*	PC 20's
13-Feb-87	1335	38		45*	*	*	clear 20's
18-Mar-87	1400	42		12.5			PC 20's
08-Apr-87	1430	39.3		2350est	7.96	232	PC 50's
21-May-87	1220	50		70	7.69	1685.	rain 50's
16-Jun-87	1600	58		60	7.50	1444.	clear 80's
15-Jul-87	1020	55		75	8.24	1327.	clear 80's
11-Aug-87	1400	60		50	8.05	1578	clear 70's
17-Sep-87	1420	66		25	8.56	1779	clear 70's
21-Oct-87	1125	48		50	8.06	1791	clear 50's
17-Nov-87	940	38		45	7.16	1985	snow 20's
15-Dec-87	1500	32		25	7.81	4065	PC 20's
21-Jan-88	1400	32		12	7.74	14132	PC 10's
12-Feb-88	1310	36		12	7.92	4763	PC 20's
23-Mar-88	1200	36		150	7.21	1021	cloudy 40's
18-Apr-88	1000	48		125	8.18	375	rain 40's
16-May-88	1110	58		110	7.92	1090	PC 60's
07-Jun-88	1350	56		100	8.20	1118	clear 70's
14-Jul-88	1100	64		75	*	*	PC 80's
15-Aug-88	1440	66		50	*	*	PC 80's
13-Sep-88	1340	49		65	7.00	1677	rain 40's
12-Oct-88	1105	52		35	7.54	1658	rain 40's
14-Nov-88	1407	46		46	7.12	1548	cloudy 30's
15-Dec-88	1430	41		25	7.98	3680	cloudy 10's
31-Jan-89	1130	38		45	8.00	4290	PC 30'S
27-Feb-89	1340	37		30	7.76	3275	PC 30'S
30-Mar-89	1350	47		60	8.05	2280	PC 30'S
17-Apr-89	1330	49		25	7.95	1976	PC 60'S
19-May-89	1045	62		25	7.28	1516	PC 60'S
19-Jun-89	1020	63		19	7.38	1648	PC 70'S
19-Jul-89	1015	59		15	8.06	1296	PC 80'S
16-Aug-89	1505	68		20	7.80	2000	cloudy 70's
12-Sep-89	1440	53		40	7.70	1708	rain 40's

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

BELOW THE MINE

	<----- Field Measurements ------->					
			Flow		Cond.	
Date	Time	Temp.	ft. GPM	pH	(uS)	Weather
10-Oct-89	1035	54	45	7.46	1597	PC 60's
14-Nov-89	1405	44	300**	7.23	1092	clear 40's
15-Dec-89	1320	36	40	7.70	1509	clear 30's
09-Jan-90	1500	39	30	7.84	1710	PC 40's
19-Feb-90	1510	46	325**	7.27	1621	cloudy 30's
05-Mar-90	1520	35	35	6.83	3416	rain 30's
16-Apr-90	1245	52	526**	7.54	808	PC 60's
10-May-90	1335	51	35	8.14	1642	clear 80's
06-Jun-90	1040	57	580**	7.79	1150	clear 80's
11-Jul-90	1030	62	25	7.67	1812	PC 80's
13-Aug-90	1230	62	550**	7.68	1012	rain 70's
07-Sep-90	1135	68	50	7.39	1384	PC 80'S
08-Oct-90	1130	55	500**	7.70	878	PC 30'S
12-Nov-90	1220	42	60	7.89	1980	PC 30'S
17-Dec-90	1300	42	12	7.45	4084	PC 20'S

* meter out of service
** includes Wilberg Mine Discharge

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

MEETINGHOUSE CANYON

Date	Time	Temp.	Field Measurements Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
13-Jan-86	1230		no flow				cloudy 20's
12-Feb-86	1445		no flow				snow 20's
11-Mar-86	1430		no flow				cloudy 30's
09-Apr-86	930		no flow				cloudy 40's
13-May-86	1150	45	0.7	799			clear 60's
10-Jun-86	900	51	1.13	1,661			PC 60's
07-Jul-86	1030	52	0.59	615			cloudy 70's
13-Aug-86	1015	56	0.2	117			PC 70's
19-Sep-86	1030	42	0.11	45			PC 50's
17-Oct-86	1155	38	0.1	40			PC 40's
10-Nov-86	1120		no flow				clear 30's
12-Dec-86	1030		no flow				PC 20'S
13-Jan-87	1100		no flow				rain 30's
13-Feb-87	1015		no flow				snow 20's
17-Mar-87	1145		no flow				clear 40's
08-Apr-87	950		no flow				clear 40's
20-May-86	1350	44	0.89	1,153	8.36	362	rain 50's
16-Jun-86	1150	55	0.65	713	8.39	380.7	clear 70's
15-Jul-87	1430	58	0.27	186	8.39	387.3	clear 80's
18-Aug-87	1100	58	0.13	61	7.47	420	clear 70's
22-Sep-87	1000	58	0.05	14	8.47	442	clear 70's
21-Oct-87	950	36	0.05	14	8.34	485	clear 30's
10-Nov-87	1005	33	0.09	35	7.65	478	cloudy 30's
15-Dec-87	830		no flow				PC 20'S
21-Jan-88	1300		no flow				PC 10'S
12-Feb-88	900		no flow				clear 20's
23-Mar-88	1000		no flow				cloudy 30's
18-Apr-88	1305	39	0.25	165	8.45	358	rain 40's
16-May-88	1500	49	1.15	1,213	8.21	314	PC 70's
07-Jun-88	1015	58	0.7	798	7.01	354	clear 70's
14-Jul-88	1302	60	0.22	136	*	*	PC 80's
16-Aug-88	910	61	0.15	76	*	*	clear 70's
13-Sep-88	1230	46	0.2	117	7.02	384	snow 30's
17-Oct-88	1025	41	0.13	61	7.13	450	clear 50's
16-Nov-88	1015		no flow				cloudy 30's
15-Dec-88	900		no flow				cloudy 10's
31-Jan-89	955		no flow				PC 20's
27-Feb-89	1120		no flow				PC 40's
30-Mar-89	1040		no flow				PC 30's
17-Apr-89	1030		no flow				PC 60's
19-May-89	1630		no flow				PC 60's
19-Jun-89	915		no flow				PC 80's
19-Jul-89	1305		no flow				PC 80's
15-Aug-89	1025		no flow				PC 70's
14-Sep-89	1225		no flow				clear 60's

MEETINGHOUSE FLUME - LEFT FORK

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

MEETINGHOUSE CANYON

Date	Time	<--- Field Measurements ---> Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Weather
12-Oct-89	1420		no flow				PC 60's
13-Nov-89	1300		no flow				clear 40's
06-Dec-89	1305		no flow				clear 30's
10-Jan-90	1400		no flow				PC 40's
20-Feb-90	1200		no flow				cloudy 30's
06-Mar-90	1445		no flow				PC 30's
19-Apr-90	1100		no flow				PC 40's
10-May-90	1045		no flow				clear 60's
13-Jun-90	1509	71	0.1	40.7	7.89	575	clear 80's
11-Jul-90	1320		no flow				PC 90's
13-Aug-90	1350		no flow				rain 70's
06-Sep-90	1510		no flow				PC 60'S
08-Oct-90	1500		no flow				PC 30's
20-NOV-90	1545		no flow				snow 20's
05-DEC-90	850		no flow				PC 10's

* meter out of service

RILDA CANYON FLUME 1 - RIGHT FORK

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #1 (RCF1)

	<----- Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
04-17-89	1120		DRY				PC 60's
05-11-89	925		DRY				PC 60'S
06-12-89	1505	54	0.15	189.9 @ lab			PC 70'S
07-19-89	1330		DRY				PC 80'S
08-15-89	1045		DRY				PC 70'S
09-14-89	1250		DRY				clear 60'S
10-12-89	1430		DRY				PC 50's
11-13-89	1300		DRY				PC 40's
Dec 89			INACCESSIBLE				clear 30's
Jan-Mar 90			INACCESSIBLE				N/A
04-19-90	1225		DRY				cloudy 60's
05-10-90	1055	38	0.18	192.7	8.51	333	clear 70's
06-13-90	1545	51	0.28	380.2	8.2	337	clear 80's
07-11-90	1350		DRY				PC 80's
08-13-90	1415		DRY				rain 70's
09-06-90	1115		DRY				PC 60'S
10-24-90	1100		DRY				clear 40's
11-07-90	1200		DRY				PC 30'S
12-14-90	1045		DRY				PC 10'S

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - LEFT FORK (RLF1)

Date	Time	Temp.	GPM	pH	Cond. (uS)	Weather
		<----- Field Measurements ----				
Dec 89			INACCESSILBE			clear 30's
Jan-Mar 90			INACCESSILBE			N/A
04-19-90	1215		DRY			cloudy 60's
05-10-90	1110		DRY			clear 70's
06-13-90	1610		DRY			clear 80's
07-11-90	1345		DRY			PC 80's
08-13-90	1420		DRY			rain 70's
09-06-90	1125		DRY			PC 60'S
10-24-90	1055		DRY			clear 40's
11-07-90	1150		DRY			PC 30'S
12-14-90	1040		DRY			PC 10'S

RILDA CANYON FLUME - 2 (ABOVE NEWUA)

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #2 (RCF2)

	<----- Field Measurements ------>						
			Flow			Cond.	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Weather
04-17-89	1130		DRY				PC 60's
05-11-89	935		DRY				PC 60'S
06-12-89	1525		0.1	78.02			PC 70'S
07-19-89	1325		DRY				PC 80'S
08-15-89	1320		DRY				PC 70'S
09-14-89	1320		DRY				clear 60'S
10-12-89	1440		DRY				PC 50's
11-13-89	1320		DRY				PC 40's
12-06-89	1340		DRY				clear 30's
01-10-90	1430		DRY				PC 30's
Feb-Mar 90			INACCESSIBLE				N/A
04-19-90	1250		DRY				cloudy 60's
05-10-90	1125		DRY				clear 70's
06-13-90	1620	51	0.13	116.8	8.5	389	clear 80's
07-11-90	1410		DRY				PC 80's
08-13-90	1430		DRY				rain 70's
09-06-90	1135		DRY				PC 60'S
10-24-90	1150		DRY				clear 40's
11-07-90	1225		DRY				PC 30'S
12-14-90	1105		DRY				PC 10'S

RILDA CANYON FLUME - 3 (BELOW NEWUA)

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #3 (RCF3)

	<----------Field Measurement---------->							
			Flow			Cond.	Dissolved	
Date	Time	Temp.	ft.	GPM	pH	(uS)	Oxygen	Weather
04-17-89	1215	52	0.04	19.1				PC 60's
05-11-89	940	56	0.1	78.0				PC 60'S
06-12-89	1530	62	0.1	78.0	performed @ lab			PC 70'S
07-19-89	1330	66	0.06	35.4	7.81	546	7.11	PC 80'S
08-15-89	1200	64	0.07	45.1	8.00	825	7.50	PC 70'S
09-14-89	1320	47	0.06	35.6	7.45	682	7.20	clear 60'S
10-12-89	1500	54	0.08	55.4	7.31	709	11.53	PC 50's
11-13-89	1325	38	0.03	12.2	7.23	766	8.67	PC 40's
12-06-89	1345	38	0.05	26.9	7.77	641	5.04	clear 30's
01-10-90	1435	38	0.04	19.1	7.52	703	6.19	clear 30's
Feb-Mar 90			INACCESSIBLE					N/A
04-19-90	1255	46	0.1	78.0	7.84	834	7.23	cloudy 60's
05-10-90	1139	52	0.13	116.8	7.96	755	7.90	clear 70's
06-13-90	1630	52	0.17	176.5	7.91	470	8.43	clear 80's
07-11-90	1420	63	0.05	26.9	7.61	667	6.20	PC 80's
08-13-90	1440	58	0.05	26.9	7.79	694	6.23	rain 70's
09-06-90	1235	56	0.09	66.4	7.62	684	6.80	PC 60'S
10-24-90	1155	48	0.08	55.4	7.64	706	6.80	clear 40's
11-07-90	1300	48	0.04	19.1	7.86	702	8.19	PC 30'S
12-14-90	1110	39	0.04	19.1	7.65	648	*	PC 10'S

* meter out of service

RILDA CANYON WEIR - 4 (NEAR HWY 31)

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - WEIR #4 (RCW4)

Date	Time	Temp.	Flow ft.	Flow GPM	pH	Cond. (uS)	Dissolved Oxygen	Weather
04-17-89	staff gage needed							PC 60's
05-11-89	staff gage needed							PC 60'S
06-12-89	1540	54	0.4	114.9	performed @ lab			PC 70'S
07-19-89	1450	64	0.37	93.44	8.06	588	7.11	PC 80'S
08-15-89	1215	68	0.4	114.9	8.30	800	7.60	PC 70'S
09-14-89	1340	52	0.39	103.9	7.47	682	7.18	clear 60'S
10-12-89	1515	49	0.41	117.8	7.53	654	12.08	PC 50's
11-13-89	1340	42	0.41	117.8	7.35	751	9.23	PC 40's
12-06-89	1400	37	0.36	85.1	8.04	570	6.40	clear 30's
01-10-90	1450	36	0.35	73.8	7.54	686	5.74	clear 30's
Feb-Mar 90			INACCESSIBLE					N/A
04-19-90	1305	42	0.42	125.1	7.77	778	8.51	cloudy 60's
05-10-90	1155	44	0.41	117.8	8.11	686	8.15	clear 70's
06-13-90	1645	52	0.65	372.7	7.89	575	9.21	clear 80's
07-11-90	1450	67	0.38	97.4	7.51	710	5.80	PC 80's
08-13-90	1455	62	0.35	73.8	7.51	737	5.89	rain 70's
09-06-90	1400	58	0.39	104.0	7.70	767	6.10	PC 60'S
10-24-90	1305	39	0.40	114.9	7.86	679	7.60	clear 40's
11-07-90	1405	40	0.40	114.9	7.74	787	6.92	PC 30'S
12-14-90	1135	34	0.30	54.0	7.78	688	*	PC 10'S

* meter out of service

EAST MOUNTAIN SPRINGS DISCHARGE
1990

Spring	Date Sampled	Flow (GPM)	Temp. F	Date Sampled	Flow (GPM)	Temp. F	Seasonal Net Change %
Sheba	07-02-90	8.1	41	10-10-90	1.6	39	-80%
Elk Spring	07-02-90	130.8	39	10-10-90	36.8	39	-72%
Burnt Tree	07-03-90	4.1	49	10-10-90	3.5	41	-15%
Jerk Water							
Pine Springs							
Pine Sp. Trough							
Ted's Tub	07-03-90	13.0	52	10-10-90	dry		
79-1							
79-2	07-03-90	3.0	47	10-10-90	2.3	45	-23%
79-3							
79-4							
79-5							
79-6							
79-7							
79-8							
79-9							
79-10	07-02-90	10.2	47	10-10-90	3.0	43	-71%
79-11							
79-12	07-03-90	dry		10-10-90	dry		
79-13							
79-14							
79-15	07-02-90	3.9 3.2	44	10-10-90	1.7	41	-56%
79-16							
79-17							
79-18							
79-19							
79-20							
79-21							
79-22							
79-23	07-03-90	dry		10-10-90	dry		
79-24	07-03-90	dry		10-10-90	dry		
79-25							
79-26	07-03-90	dry		10-10-90	dry		
79-27							
79-28	07-03-90	1.8	47	10-10-90	2.0	43	11%
79-29	07-03-90	1.3	47	10-10-90	1.0	40	-23%
79-30							
79-31							
79-32	07-03-90	damp		10-10-90	damp		
79-33							
79-34	07-02-90	dry		10-10-90	dry		
79-35	07-02-90	1.9	45	10-10-90	seep		
79-36							
79-37							
79-38	07-03-90	7.8	47	10-10-90	2.6	44	-67%
79-39							
79-40	07-03-90	dry		10-10-90	dry		
80-41	07-03-90	dry		10-10-90	dry		

EAST MOUNTAIN SPRINGS DISCHARGE
1990

Spring	Date Sampled	Flow (GPM)	Temp. F	Date Sampled	Flow (GPM)	Temp. F	Seasonal Net Change %
80-42							
80-43	07-03-90	dry		10-10-90	dry		
80-44	07-03-90	dry		10-10-90	dry		
80-45							
80-46	07-03-90	dry		10-10-90	dry		
80-47	07-03-90	2.0	46	10-10-90	3.3	42	65%
80-48	07-02-90	0.1	52	10-10-90	damp		
80-49							
80-50							
82-51	07-03-90	dry		10-10-90	dry		
82-52	07-03-90	1.3	43	10-10-90	1.1	42	-15%
84-53	07-03-90	damp		10-10-90	dry		
84-54							
84-55							
84-56	07-02-90	1.0	41	10-10-90	1.0	41	0%
85-57							
86-58							
86-59							
8[illegible] 0	07-03-90	3.2	51	10-10-90	dry		
89 1	07-02-90	60.0	44	10-10-90	24.0	41	-60%
89-62							
89-63							
89-64							
89-65	07-02-90	1.0	43	10-10-90	damp		
89-66	07-02-90	damp		10-10-90	dry		
89-67	07-02-90	3.7	39	10-10-90	2.3	39	-38%
89-68	07-02-90	damp		10-10-90	dry		
89-69							
89-70							
89-71							

Average Net Change -32%

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING
SPRING DISCHARGE RECESSION STUDY

YEAR 1990

SPRING		JUL 3&4	AUG 8	SEP 7	OCT 10		
79-10	F:	10.2	5.7	5.0	3.0		
	T:	47	42	40	43		
SHEBA SPRINGS	F:	8.1	2.0	0.8	1.6		
	T:	41	45	43	39		
ELK SPRING	F:	130.8	67.1	46.2	36.8		
	T:	39	40	40	39		
79-35	F:	1.9	2.0	1.5	SEEP		
	T:	45	47	41			
79-26	F:	DRY	DRY	DRY	DRY		
	T:						
79-29	F:	1.3	1.2	1.2	1.0		
	T:	47	47	44	40		
84-56	F:	1.0	1.0	0.6	1.0		
	T:	41	43	43	41		
80-44	F:	DRY	DRY	DRY	DRY		
	T:						
80-46	F:	DRY	DRY	DRY	DRY		
	T:						
BURNT TREE	F:	4.1	4.0	*	3.5		
	T:	49	68		41		
79-23	F:	DRY	DRY	DRY	DRY		
	T:						
82-52	F:	1.3	1.5	1.0	1.1		
	T:	43	48	42	42		

* pond level above diversion pipe - no sample

DEER CREEK MINE DISCHARGE

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK DISCHARGE QUALITY AND QUANTITY

Quality				Quantity		
Date	Time	GPM	Temp.(F)	Month		Gallons/day
01-29-86	1000	200	52	Jan-86		350,000est
02-26-86	1330	453.3	52	Feb		791,142
03-25-86	1440	364	56	Mar		713,583
04-25-86	900	453.3	52	Apr		818,470
05-29-86	1400		56	May		750,000est
07-07-86	1020	300est	56	Jun		750,000est
08-04-86	1500	650	56	Jul		750,000est
08-28-86	930	680	53	Aug		1,047,593
10-01-86	1000	650	56	Sep		884,178
10-29-86	1030	525	53	Oct		705,284
11-26-86	920	510	51	Nov		800,000est
12-15-86	930	668	52	Dec		200,000est
01-30-87	1400	650est	54	Jan-87		800,000est
02-27-87	1400	400est	52	Feb		350,000est
04-06-87	1240	450	52	Mar		550,000est
04-29-87	1100	550	55	Apr		927,066
06-01-87	1300	600	58	May		1,239,270
06-24-87	1000	1100	54	Jun		1,042,636
07-16-87	1030	950	53	Jul		1,052,546
08-18-87	1155	450	55	Aug		934,830
09-22-87	1030	700	56	Sep		1,152,242
10-21-87	1015	1050	56	Oct		1,109,403
11-10-87	1035	700	56	Nov		1,329,328
12-10-87	1110	850	57	Dec		1,303,875
01-21-88	1400	1000	55	Jan-88		1,363,633
02-12-88	1030	1200	56	Feb		1,203,024
03-23-88	1045	1200	55	Mar		1,216,595
04-18-88	1300	650	56	Apr		1,835,355
05-16-88	1550	1550	58	May		1,952,000
06-07-88	1115	750	56	Jun		1,731,815
07-28-88	1700	1400	56	Jul		1,731,815
08-16-88	940	960	58	Aug		1,673,439
09-28-88	1610	780	54	Sep		1,651,790
10-17-88	1100	1000	55	Oct		1,569,102
11-30-88	1515	1250	56	Nov		1,258,861
12-15-88	1340	1270	54	Dec		1,703,900
01-13-89	1135	1760	56	Jan-89		1,589,781
02-16-89	1350	1550	56	Feb		1,624,882
03-08-89	1450	400	56	Mar	*	1,500,000
04-17-89	1030	1300	56	Apr	*	1,800,000
05-19-89	1055	2000	55	May	*	1,800,000
06-15-89	1044	1500	55	Jun	*	1,500,000
08-01-89	1010	1800	56	Jul	*	1,800,000
08-30-89	740	500	56	Aug	*	1,800,000
09-14-89	1200	2000	56	Sep	*	1,800,000

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK DISCHARGE QUALITY AND QUANTITY

Quality				Quantity		
Date	Time	GPM	Temp.(F)	Month		Gallons/day
10-18-89	1425	1200	56	Oct	*	2,000,000
11-13-89	1225	1100	56	Nov	*	2,000,000
12-06-90	1300	1850	56	Dec		2,142,792
01-10-90	1330	2000	56	Jan-90		2,254,703
02-20-90	1055	926	54	Feb		3,093,132
03-06-90	1335	2700	55	Mar		2,988,000
03-26-90	930	2700	56	Apr		4,483,410
04-03-90	940	2000	56	May		4,712,224
04-10-90	1030	2000	55	Jun		4,131,746
05-22-90	1000	3545	55	Jul		4,347,921
06-13-90	830	3520	56	Aug		4,529,814
07-30-90	1450	3200	56	Sep		4,736,944
08-13-90	1310	3100	56	Oct		4,267,881
09-06-90	1430	3200	56	Nov		4,109,980
10-08-90	1350	3000	56	Dec		4,402,690
11-20-90	1610	2730	55			
12-06-90	1450	3135	52			

* estimated, new meter installed in Nov. 1990

WILBERG MINE DISCHARGE - GRIMES WASH

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG MINE - GRIMES WASH
PERMIT # 0022896-001A

Left Fork Grimes Wash

Quality				Quantity	
Date	Time	GPM	Temp. (F)	Month	Gallons/day
Jan-Jul 86			NO DISCHARGE	Jan-Jul 86	NO DISCHARGE
Aug				Aug	76,296
Sep-Dec 86			NO DISCHARGE	Sep-Dec 86	NO DISCHARGE
Jan-Dec 87			NO DISCHARGE	Jan-Dec 87	NO DISCHARGE
Jan-Dec 88			NO DISCHARGE	Jan-Jul 88	NO DISCHARGE
Jan-Sep 89			NO DISCHARGE	Jan-Sep 89	NO DISCHARGE
10-25-89	1440	245	54	Oct	336,644
11-14-89	1410	245	55	Nov	83,093
12-11-89	1055	240	52	Dec	216,385
01-15-90	1245	240	56	Jan 90	168,554
02-19-90	1320	240	56	Feb	410,975
03-12-90	1030	450	55	Mar	304,631
04-16-90	1235	526	56	Apr	109,490
05-14-90	1130	209	54	May	96,358
06-19-90	1015	450	56	Jun	127,178
07-23-90	1100	380	55	Jul	244,290
08-21-90	1020	450	56	Aug	146,619
09-24-90	1025	5	56	Sep	110,930
10-08-90	1130	500	55	Oct	173,825
11-12-90	1200	20	56	Nov	27,686
12-17-90	1155	1.2	56	Dec	42,266

PACIFICORP - FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG MINE - MILLER CANYON
PERMIT # 0022896-004A

Miller Canyon Breakout

Quality				Quantity	
Date	Time	GPM	Temp. (F)	Month	Gallons/day
Jan-Sep 86		NO DISCHARGE		Jan-Sep 86	NO DISCHARGE
11-29-1986	1300	25	46	Oct	36,000
Nov-May 87		NO DISCHARGE		Nov-May 87	NO DISCHARGE
06-29-87	1300	<5	52	Jun	3,600
07-28-87	1205	10-15	50	Jul	17,419
Aug-Dec 87		NO DISCHARGE		Aug-Dec 87	NO DISCHARGE
Jan-Aug 88		NO DISCHARGE		Jan-Aug 88	NO DISCHARGE
Sep	1500	4.3	52	Sept	185,760
Oct		NO DISCHARGE		Oct	NO DISCHARGE
11-30-88	1315	12	54	Nov	259,200
Dec 88		NO DISCHARGE		Dec	NO DISCHARGE
Jan-Mar 89		NO DISCHARGE		Jan-Mar 89	NO DISCHARGE
04-17-89	1500	70	56	Apr	100,800
05-19-89	1515	71	56	May	102,240
06-15-89	1730	58	60	Jun	86,400
07-26-89	920	54	65	Jul	93,600
08-08-89	825	78	56	Aug	106,560
08-29-89	940	70	54	Sep	89,280
09-12-89	1400	62	58	Oct	54,720
10-17-89	915	40	52	Nov	43,920
11-14-89	1520	35	50	Dec	53,280
12-11-89	1130	46	46	Jan 90	18,720
01-15-90	1115	12	47	Feb	24,480
02-19-90	1126	11	47	Mar	24,480
03-12-90	950	18	46	Apr	25,920
04-16-90	955	25	52	May	36,720
05-14-90	1115	25	51	Jun	27,000
06-19-90	1045	25	61	Jul	25,920
07-23-90	950	20	59	Aug	35,280
08-21-90	930	24	55	Sep	50,400
09-24-90	945	35	58	Oct	50,400
10-08-90	1025	40	52	Nov	54,000
11-12-90	1345	40	44	Dec	39,600
12-17-90	1355	25	44		

DEER CREEK IN-MINE

PACIFICORP FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK IN-MINE QUALTIY & LONG TERM FLOW

Date	Location	QUALITY Time	Temp.(F)	GPM	Date	LONG TERM FLOW(GPM) Site #1	Site #2
03-25-86	EM - 3	1138	54	2.9	03-25-86		
03-25-86	3rd S XC-33	1220	56	0.2	08-04-86		
08-04-86	1st S XC-40	1430	55	0.4	09-26-86		
08-04-86	3rd SB XC-21	1330	53	0.6	12-22-86		
09-26-86	3rd N XC-41	950	54	5.0	03-26-87		
09-26-86	EM - 3	1045	56	2.5	03-31-87		
12-22-86	EM - 3	1050	56	2.5	07-09-87		
12-22-86	3rd SB XC-21	1120	52	0.5	10-07-87		
03-26-87	3rd N XC-41	1230	52	4.3	12-14-87		
03-31-87	EM - 3	1330	54	2.2	03-25-88		
07-09-87	3rd SB XC-21	1300	52	0.5	07-30-88		
07-09-87	EM-3	1320	54	2.0	10-26-88		
10-07-87	3rd N XC-41	1350	50	4.1	12-15-88		38.0
10-07-87	EM - 3	1450	53	1.8	03-08-89		25.0
12-14-87	EM - 3	1510	57	1.6	06-06-89		16.7
12-14-87	3rd SB XC-21	1444	55	0.5	09-14-89		8.6
03-25-88	3rd N XC-41	1300	54	3.8	12-06-89		4.5
03-25-88	3rd SB XC-21	1245	56	0.4	03-09-90		11.9
0[illegible]-88	3rd N XC-41	1450	54	3.7	06-29-90	781.0	6.0
07 0-88	1st W XC-25	1420	56	103.7	09-07-90	270.0	3.3
10-26-88	3rd N XC-41	1100	55	3.5	12-19-90	122.5	5.0
10-26-88	1st W XC-25	1045	56	120.7			
12-15-88	3rd N XC-41	1040	56	4.1			
12-15-88	1st W XC-25	1050	55	112.2			
12-15-88	TW-10	1200	44	38.0			
03-08-89	3rd N XC-41	1410	54	3.1			
03-08-89	1st W XC-25	1430	52	99.6			
03-08-89	TW-10	1400	44	25.0			
06-06-89	1st W XC-25	1000	54	10.7			
06-06-89	TW-10	1030	48	16.7			
09-14-89	1st W XC-25	1040	54	0.4			
09-14-89	TW-10	1115	43	8.6			
09-14-89	3rd N XC-41	1100	50	2.6			
12-06-89	TW-10	1130	46	4.5			
12-06-89	3rd N XC-41	1115	52	3.2			
03-09-90	TW-10	1110	48	11.9			
03-09-90	3rd N XC-41	1120	55	1.4			
03-09-90	1st R Fault	950	52	300.0			
03-26-90	1st R Fault	855	46	300.0			
04-03-90	3rd N Slope	915	46	15.0			
04-10-90	2nd R XC-38	1000	50	200.0			
06-29-90	2nd R XC-38	1130	54	781.0			
06-29-90	TW-10	1000	46	6.0			
0[illegible] 7-90	2nd R XC-38	1630	55	270.0			
09 7-90	TW-10	1605	55	3.3			
12-[illegible]9-90	2nd R XC-38	1020	57	122.5			
12-19-90	TW-10	930	56	5.0			

Site #1 2nd R XC-38 B, two foot rectangular weir installed on 6/90

DEER CREEK IN-MINE

PACIFICORP FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK IN-MINE QUALTIY & LONG TERM FLOW

		QUALITY				LONG TERM FLOW(GPM)	
Date	Location	Time	Temp.(F)	GPM	Date	Site #1	Site #2
Site #2	3rd North XC-65 2R, TW-10						

EM - 3, 3rd South cross cut 77, terminated as of 3/87 (deteriorating roof conditions)
3rd South "B" cross cut 21, terminated as 7/88 (poor access)
1st West XC-25 - flume, terminated as 12/89 (ceased flowing)
3rd North XC-41 2R, terminated as of 6/90 (ceased flowing)

WILBERG IN-MINE

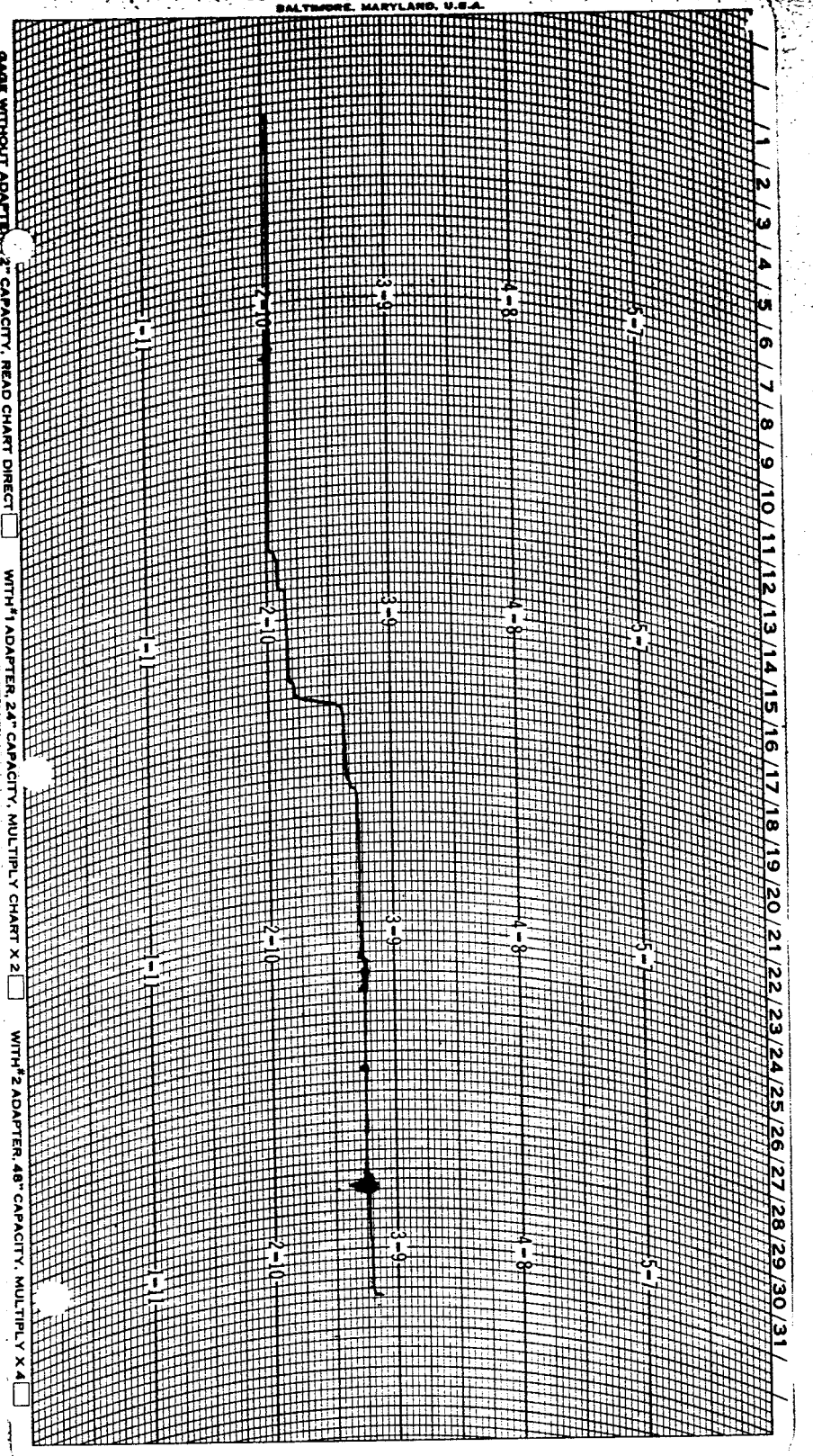
PACIFICORP FUEL RESOURCES
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG-COTTONWOOD IN-MINE QUALTIY & LONG TERM FLOW

QUALITY				LONG TERM FLOW(GPM)			
Date	Location	Time	Temp.(F)	GPM	Date	Site #1	Site #2	Site #3
03-14-86	2nd S XC-11	1400	57	0.09	03-14-86	0.09	1.61	0.08
03-14-86	4th E XC-40	1510	54	0.08	07-29-86	0.09	1.04	0.03
07-29-86	2nd S XC-11	1300	52	0.09	09-27-86	0.09	1.08	dry
07-29-86	4th E XC-24	1245	54	1.04	12-29-86	0.08	0.63	
09-27-86	2nd S XC-11	1350	56	0.09	03-31-87	0.11	0.72	
09-27-86	4th E XC-24	1430	56	1.08	07-07-87	0.06	0.52	
12-29-86	2nd S XC-11	1255	56	0.08	09-30-87	0.08	0.46	
12-29-86	4th E XC-24	1300	54	0.63	12-15-87	0.09	0.40	
03-31-87	2nd S XC-11	915	54	0.11	03-23-88	0.07	0.30	
03-31-87	4th E XC-24	930	52	0.72	07-27-88	0.03	0.27	
07-07-87	2nd S XC-11	1150	52	0.06	10-26-88	0.08	0.25	
07-07-87	4th E XC-24	1240	53	0.52	12-15-88	0.08	0.23	
09-30-87	2nd S XC-11	1500	53	0.08	03-29-89	0.08	0.21	
09-30-87	4th E XC-24	1530	55	0.46	07-17-89	0.07	0.20	
12-15-87	2nd S XC-11	1225	56	0.09	09-14-89	0.08	0.20	
12-15-87	4th E XC-24	1400	55	0.40	12-04-89	0.08	0.20	
03-23-88	2nd S XC-11	1330	54	0.07	03-08-90	0.08	0.18	
03-23-88	4th E XC-24	1445	54	0.30	06-28-90	0.07	0.18	
07-07-88	2nd S XC-11	1020	56	0.03	09-06-90	0.07	0.16	
07-07-88	4th E XC-24	1320	55	0.27	12-20-90	0.06	0.13	
10-26-88	2nd S XC-11	1015	56	0.08				
10-26-88	4th E XC-24	1330	58	0.25				
12-15-88	2nd S XC-11	1355	53	0.08				
12-15-88	4th E XC-24	1330	54	0.23				
03-29-89	2nd S XC-11	1240	55	0.08				
03-29-89	4th E XC-24	1505	54	0.21				
07-17-89	2nd S XC-11	830	56	0.07				
07-17-89	4th E XC-24	840	56	0.20				
09-14-89	2nd S XC-11	1015	54	0.08				
09-14-89	4th E XC-24	1045	53	0.20				
12-04-89	2nd S XC-11	945	51	0.08				
12-04-89	4th E XC-24	1240	54	0.20				
03-08-90	2nd S XC-11	930	54	0.08				
03-08-90	4th E XC-24	945	55	0.18				
06-28-90	2nd S XC-11	1300	55	0.07				
06-28-90	4th E XC-24	1320	55	0.08				
09-06-90	2nd S XC-11	1220	56	0.07				
09-06-90	4th E XC-24	1035	56	0.16				
12-20-90	2nd S XC-11	1120	56	0.06				
12-20-90	4th E XC-24	1335	56	0.13				

Site #1 2nd South cross-cut 11
Site #2 4th East cross cut 24

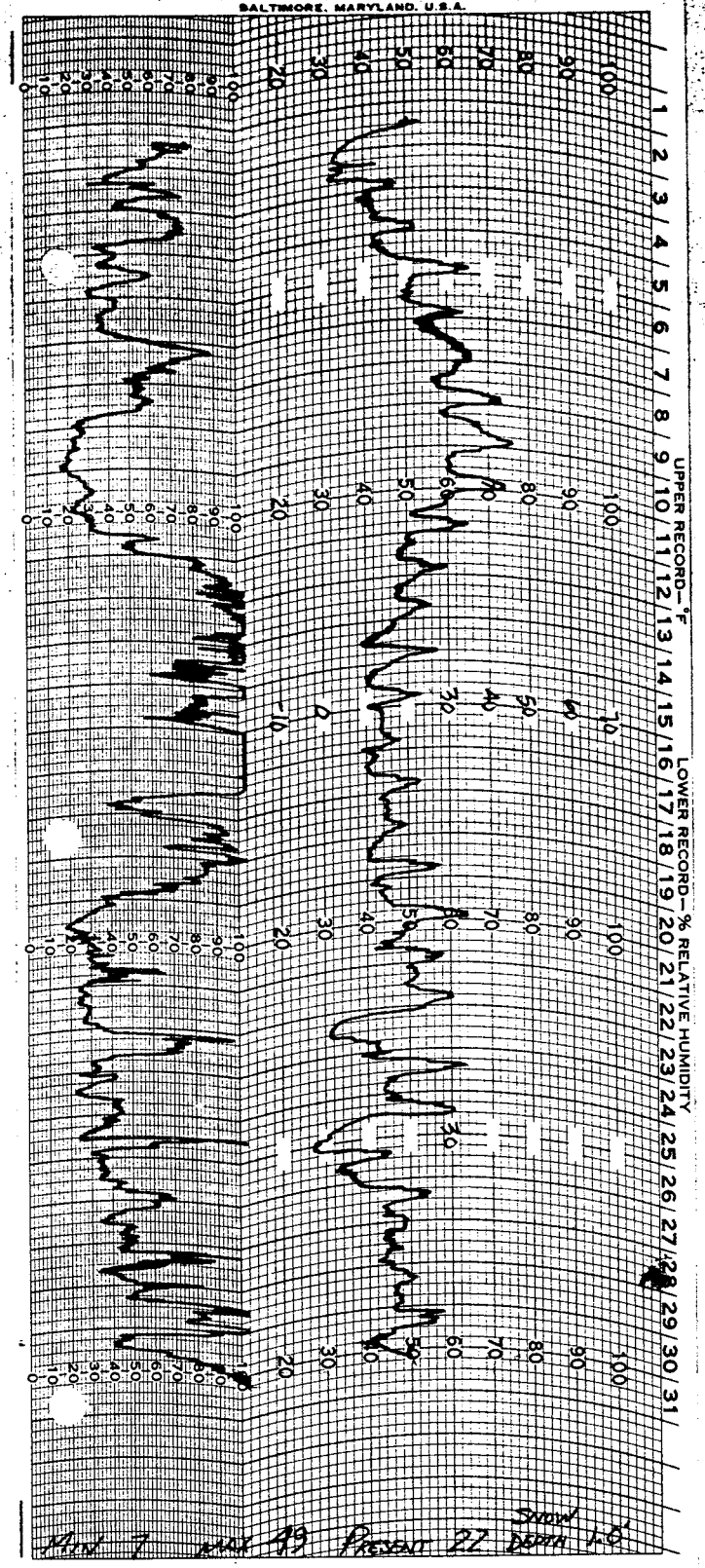
12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBORSKI ON 1140 A.M. P.M. 1-2 1990

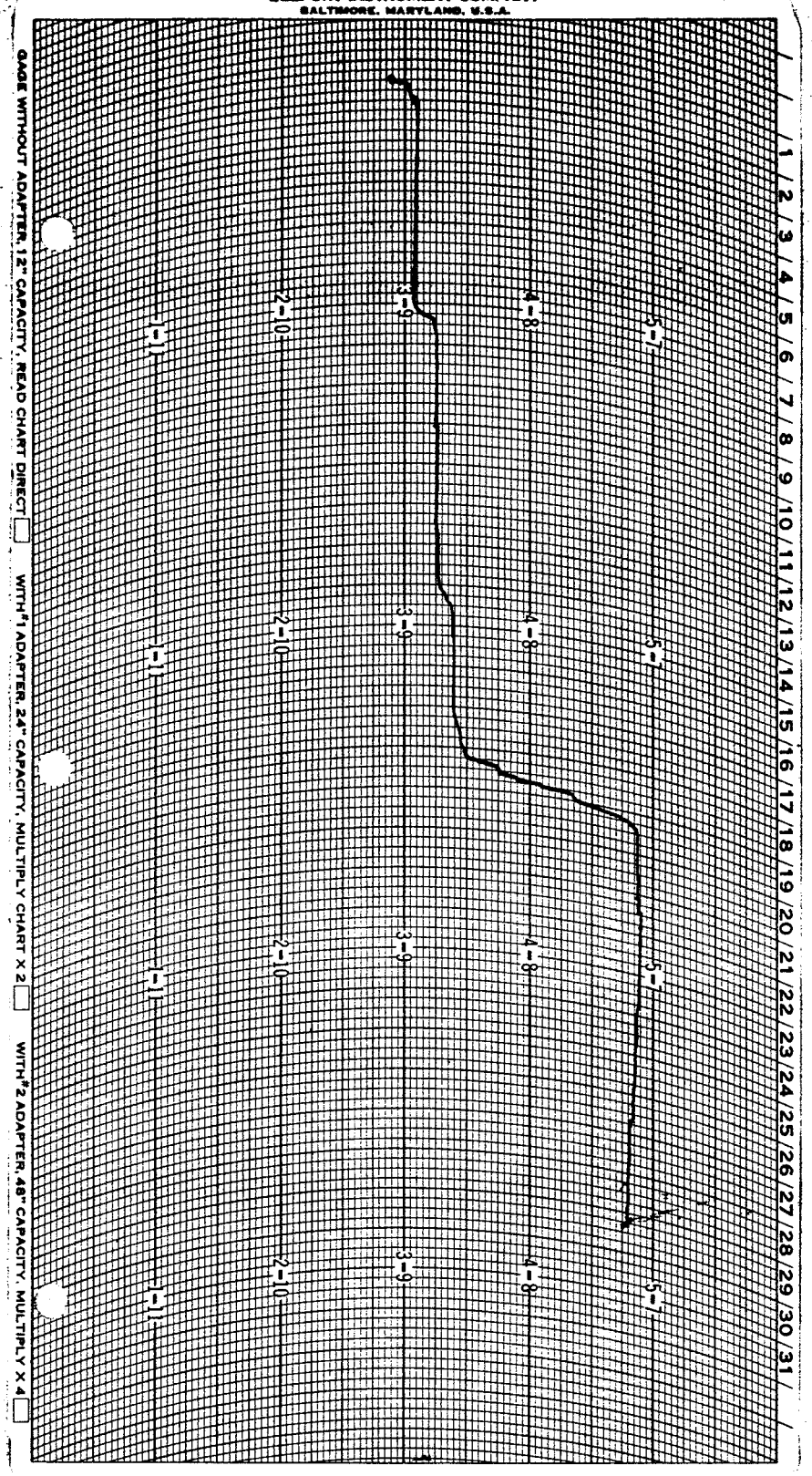
STATION EAST MTN OFF 1145 A.M. P.M. 2-1 1990

CHART NO. 15627
MONTHLY-861 HRS.
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBURSKI ON 1145 A.M. P.M. 1-2 1990
STATION EAST MTN OFF 1150 A.M. P.M. 2-1 1990

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER East Mtn

STATION

ON 1145 A.M. P.M. 2-1 1990

OFF 1015 A.M. P.M. 3-1 1990

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HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

BELFORT INSTRUMENT COMPANY

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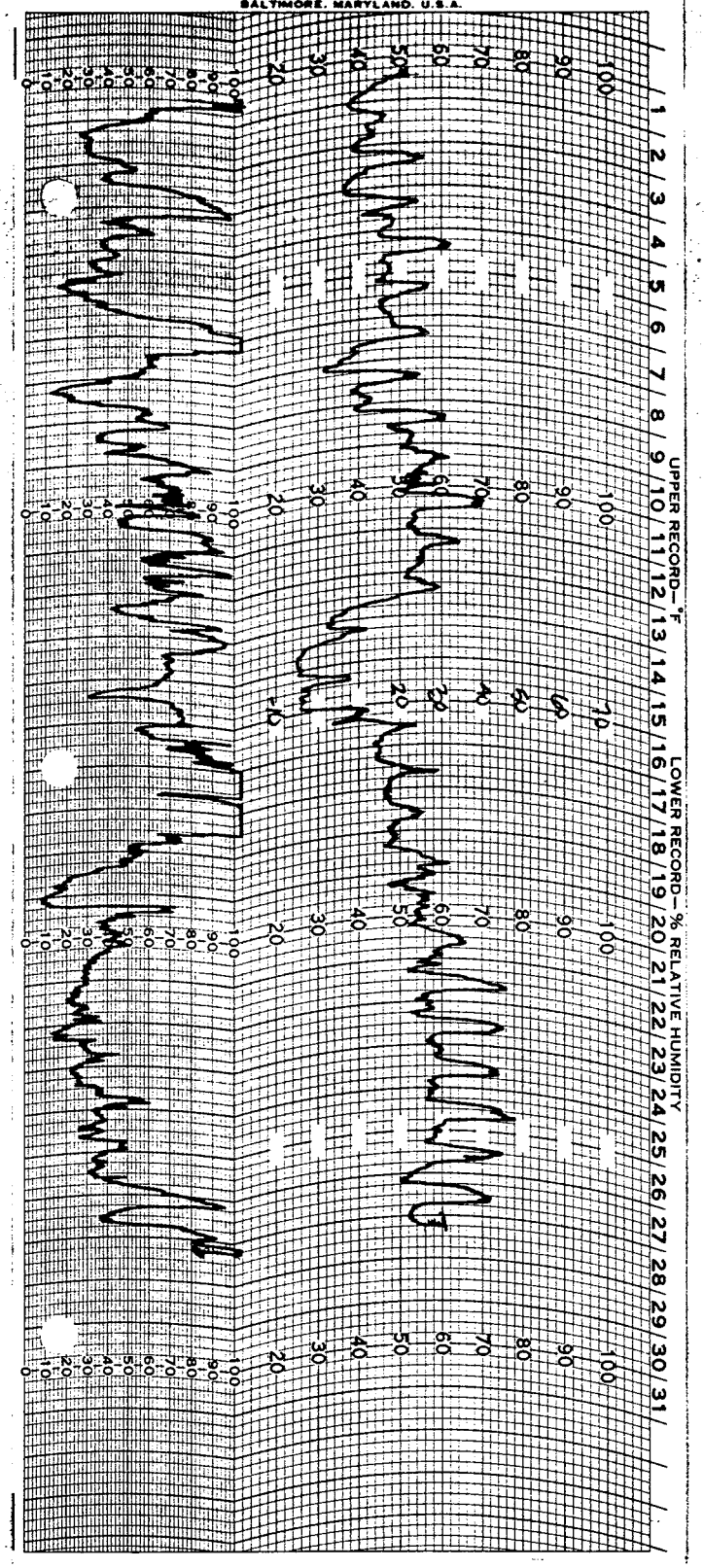

OBSERVER Semborski ON 1150 AM/PM 2-1 1990

STATION _____ OFF 1025 AM/PM 3-1 1990

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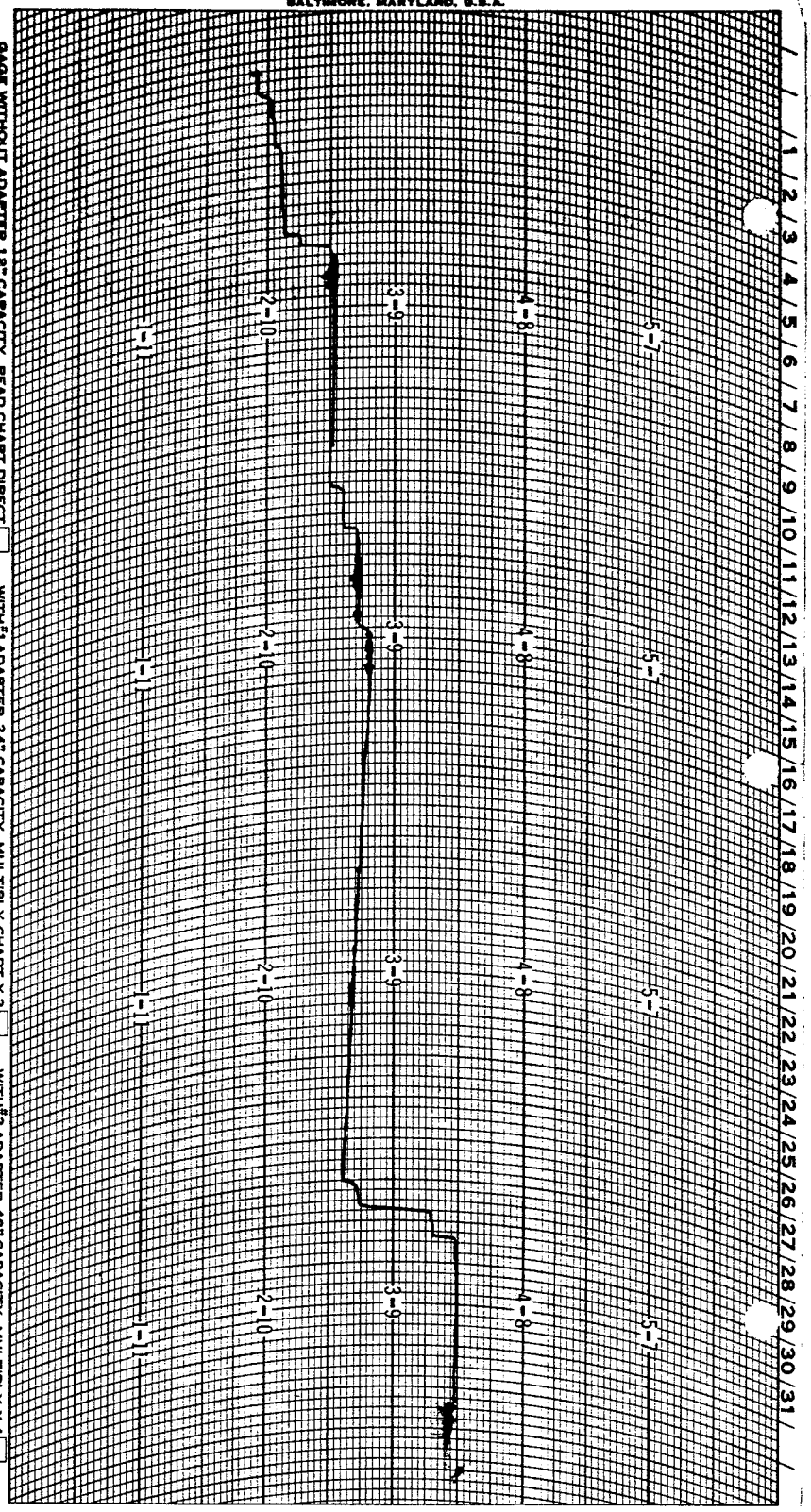
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



GAGE WITHOUT ADAPTER, 12" CAPACITY, READ CHART DIRECT ☐ WITH #1 ADAPTER, 24" CAPACITY, MULTIPLY CHART X 2 ☐ WITH #2 ADAPTER, 48" CAPACITY, MULTIPLY X 4 ☐

OBSERVER EMBUZSKI ON 1015 A.M. P.M. 3-1 19 90

STATION EAST MTN OFF 315 A.M. P.M. 4-2 19 90

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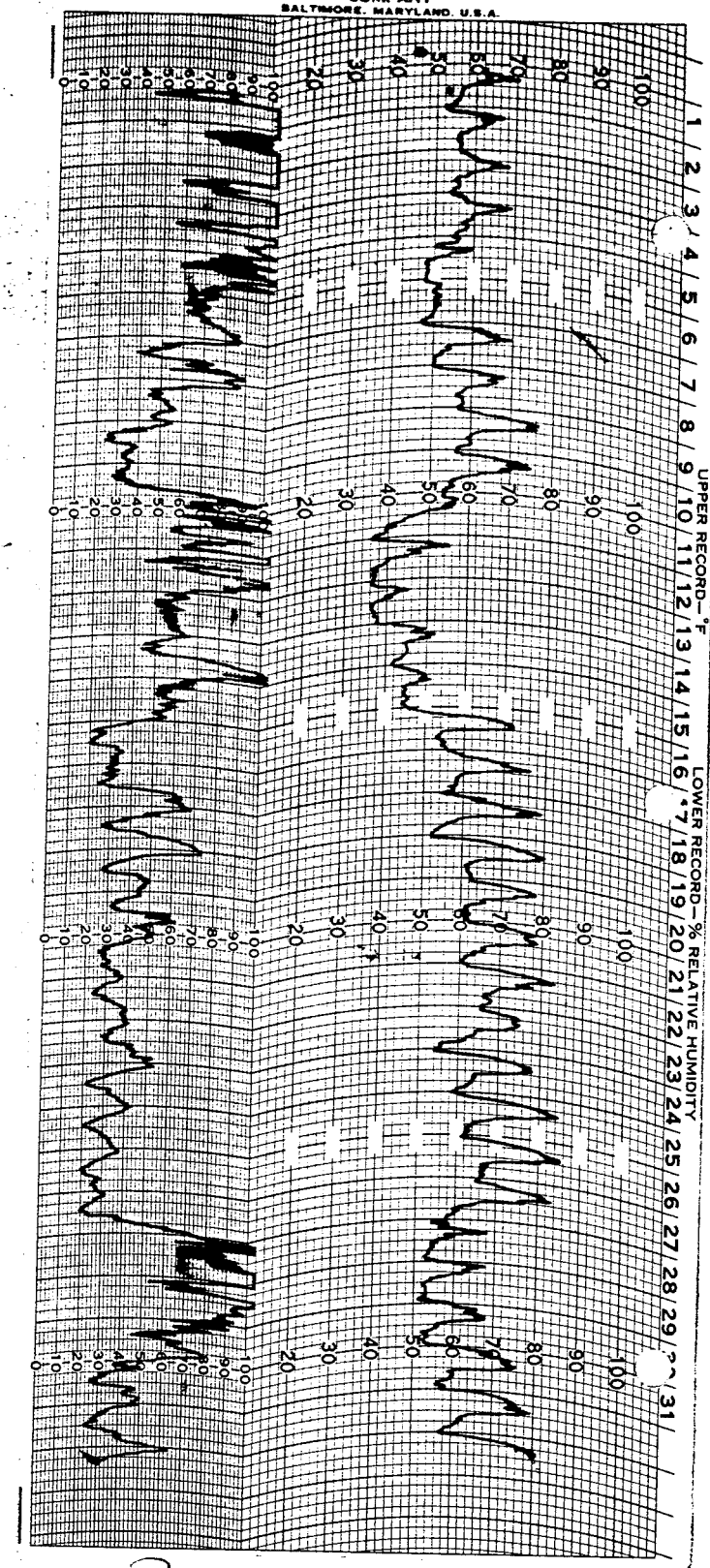
HYGROTHERMOGRAPH
CHART NO. 15627
MONTHLY-861 HRS.
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBOSKI ON 1025 A.M. P.M. 3-1 1990

STATION EAST MTN OFF 3:16 A.M. P.M. 4-2 1990

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CHART NO. 15666

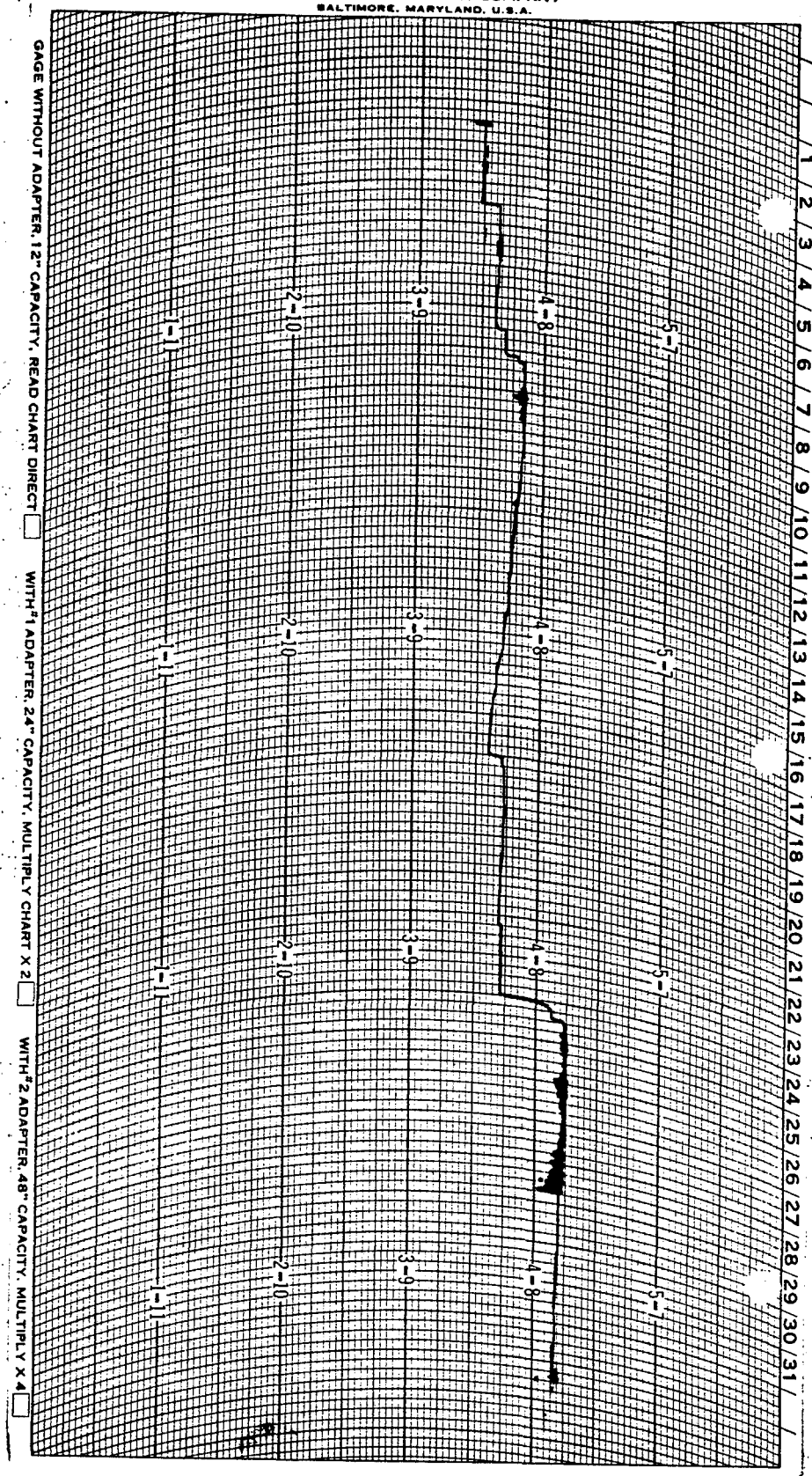
12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.

GAGE WITHOUT ADAPTER, 12" CAPACITY, READ CHART DIRECT ☐ WITH #1 ADAPTER, 24" CAPACITY, MULTIPLY CHART X 2 ☐ WITH #2 ADAPTER, 48" CAPACITY, MULTIPLY X 4 ☐



OBSERVER [illegible] Fry

STATION East M+N

ON 4-2 A.M. P.M. 3:10 PM 19 90

OFF 5-3 A.M. P.M. 1755 19 90

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HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

BELFORT INSTRUMENT COMPANY

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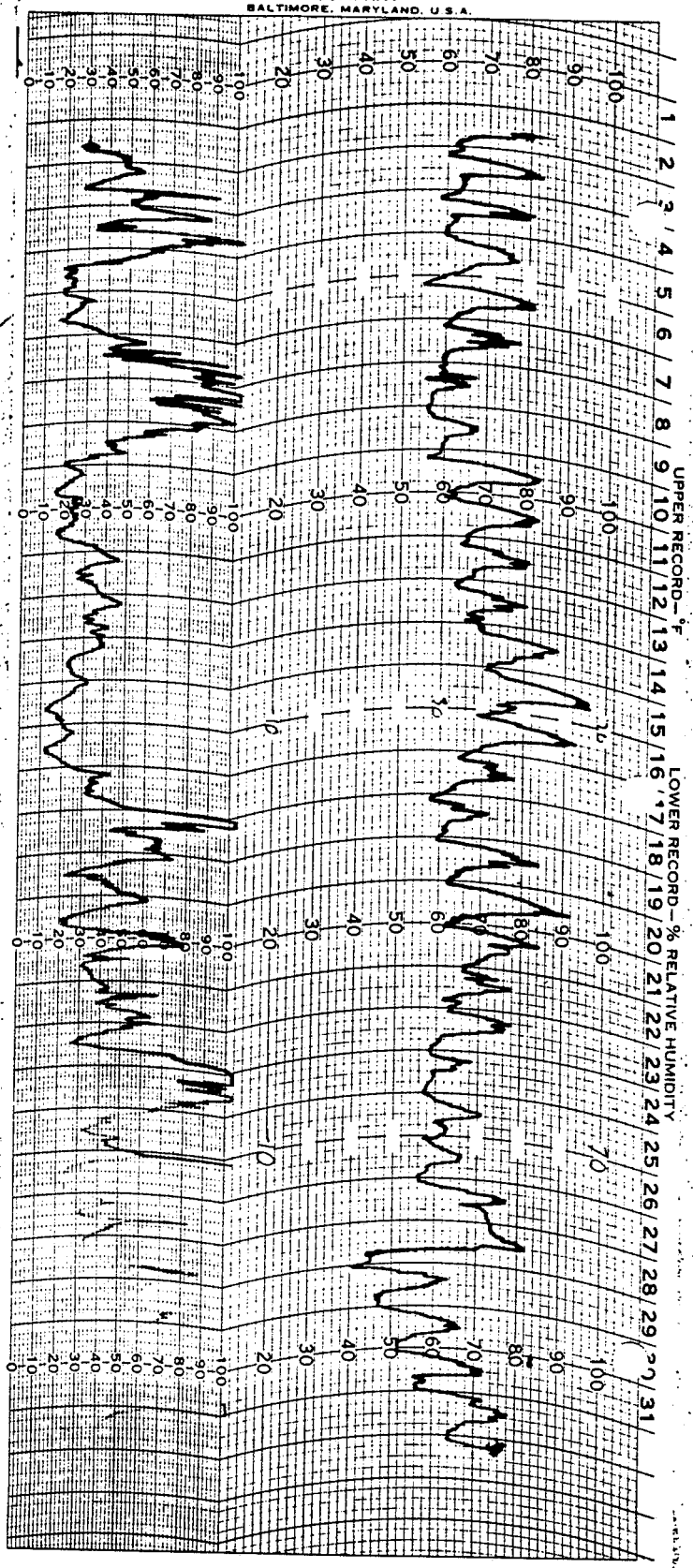

OBSERVER R C Fry ON 3:15 ~~A.M.~~ P.M. 4-2 1990

STATION East MtN OFF 1255 A.M. ~~P.M.~~ 5-3 1990

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12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

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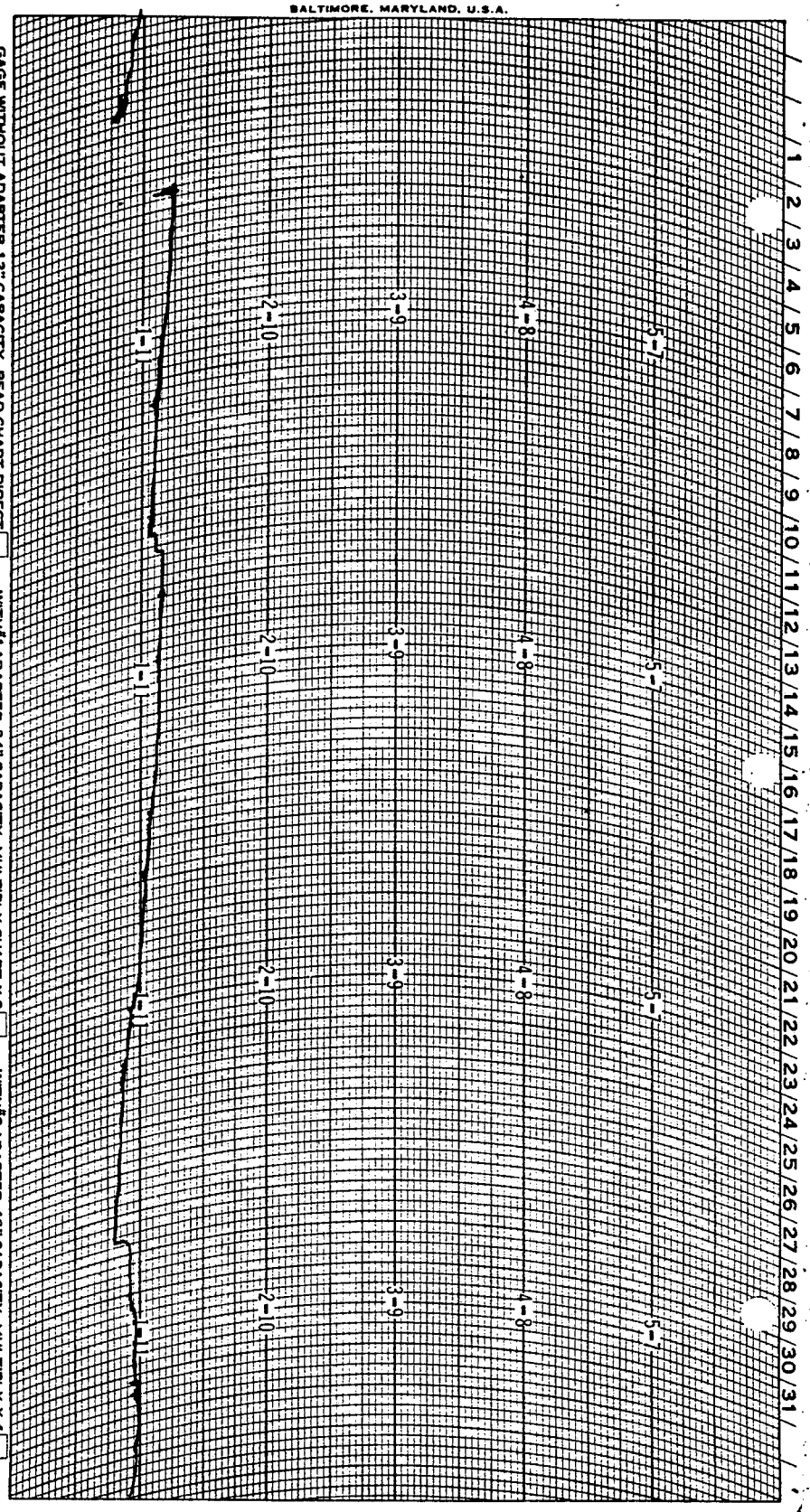

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OBSERVER SEMRURSKI ON 1255 AM/PM 5-3 19 90

STATION EAST MTN OFF 1340 AM/PM 6-6 19 90

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HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

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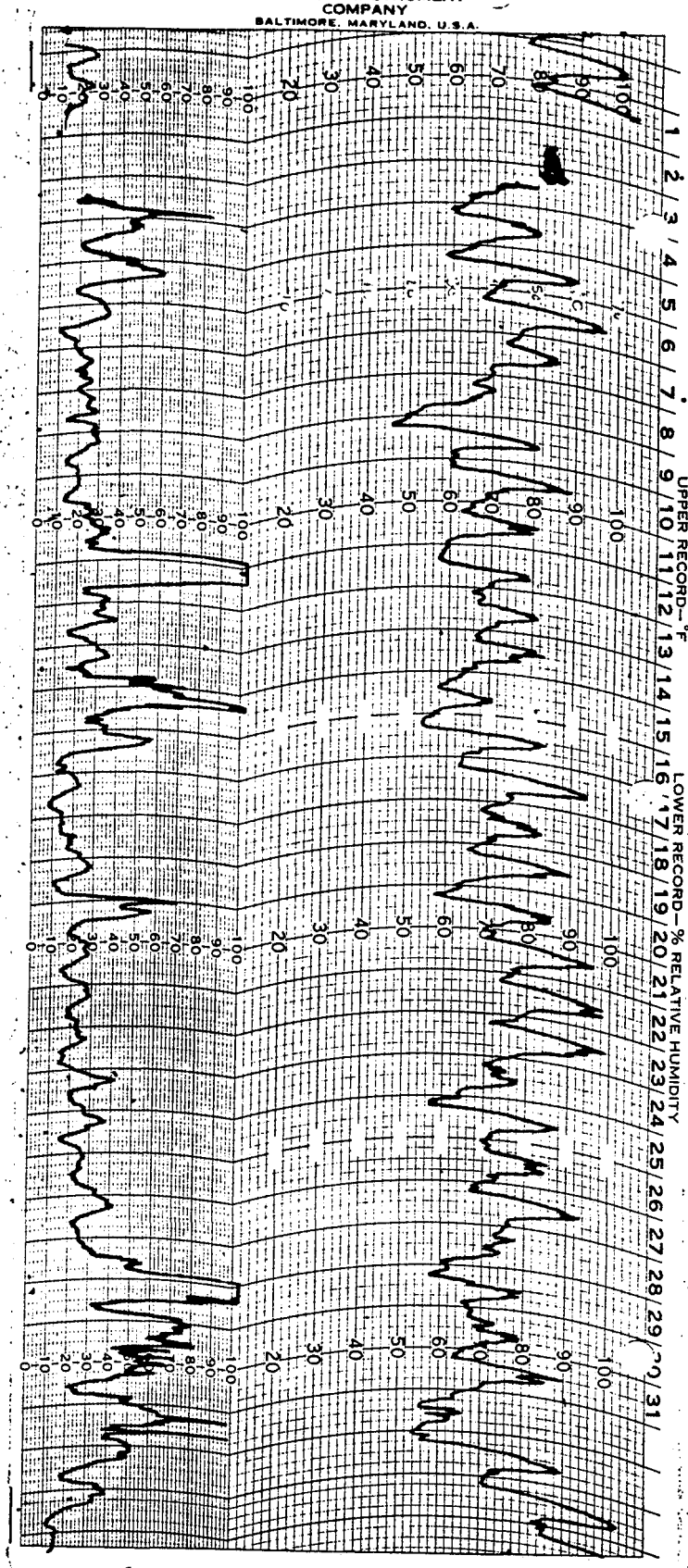

VER SEMBORSKI ON 1300 A.M. P.M. 5-3 1990

EAST MTN OFF 1400 A.M. P.M. 6-6

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CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE

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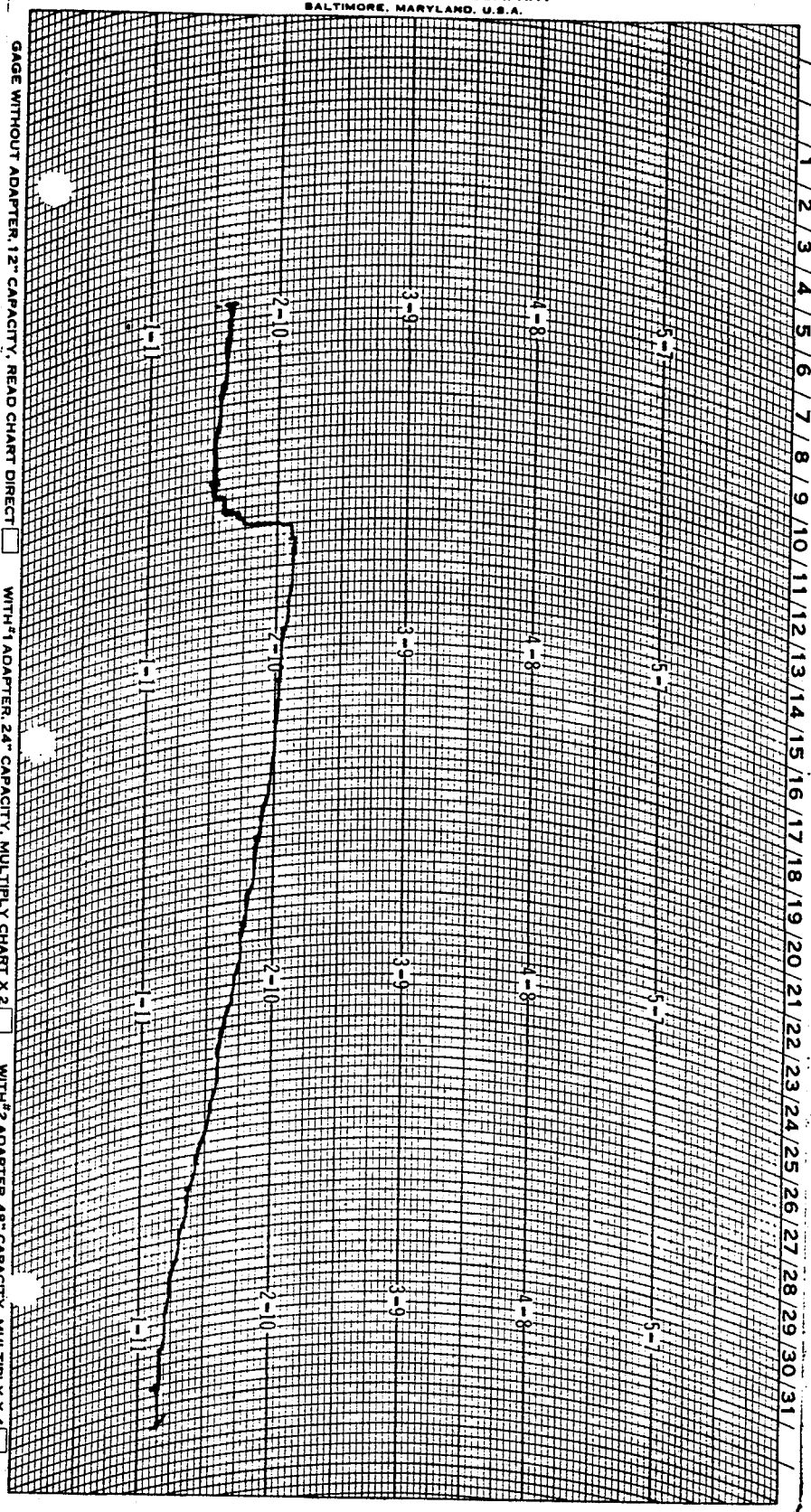

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OBSERVER SEMBOSKI ON 1343 AM (PM) 6-6 19 90

STATION EAST MTN OFF 1350 AM (PM) 7-3 19 90

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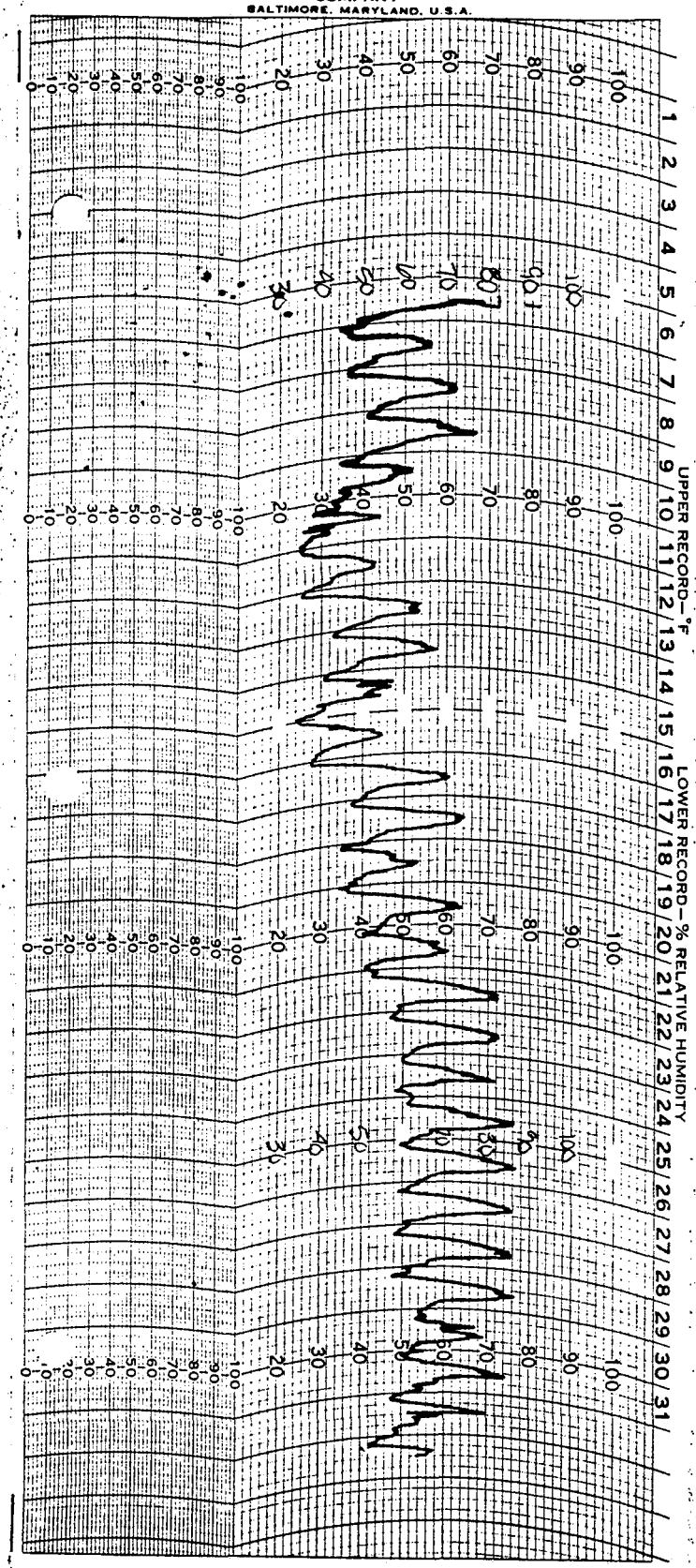
HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBORSKI ON 1400 A.M. P.M. 6-6 1990

STATION EAST MOUNTAIN OFF 1355 A.M. P.M. 7-3 1990

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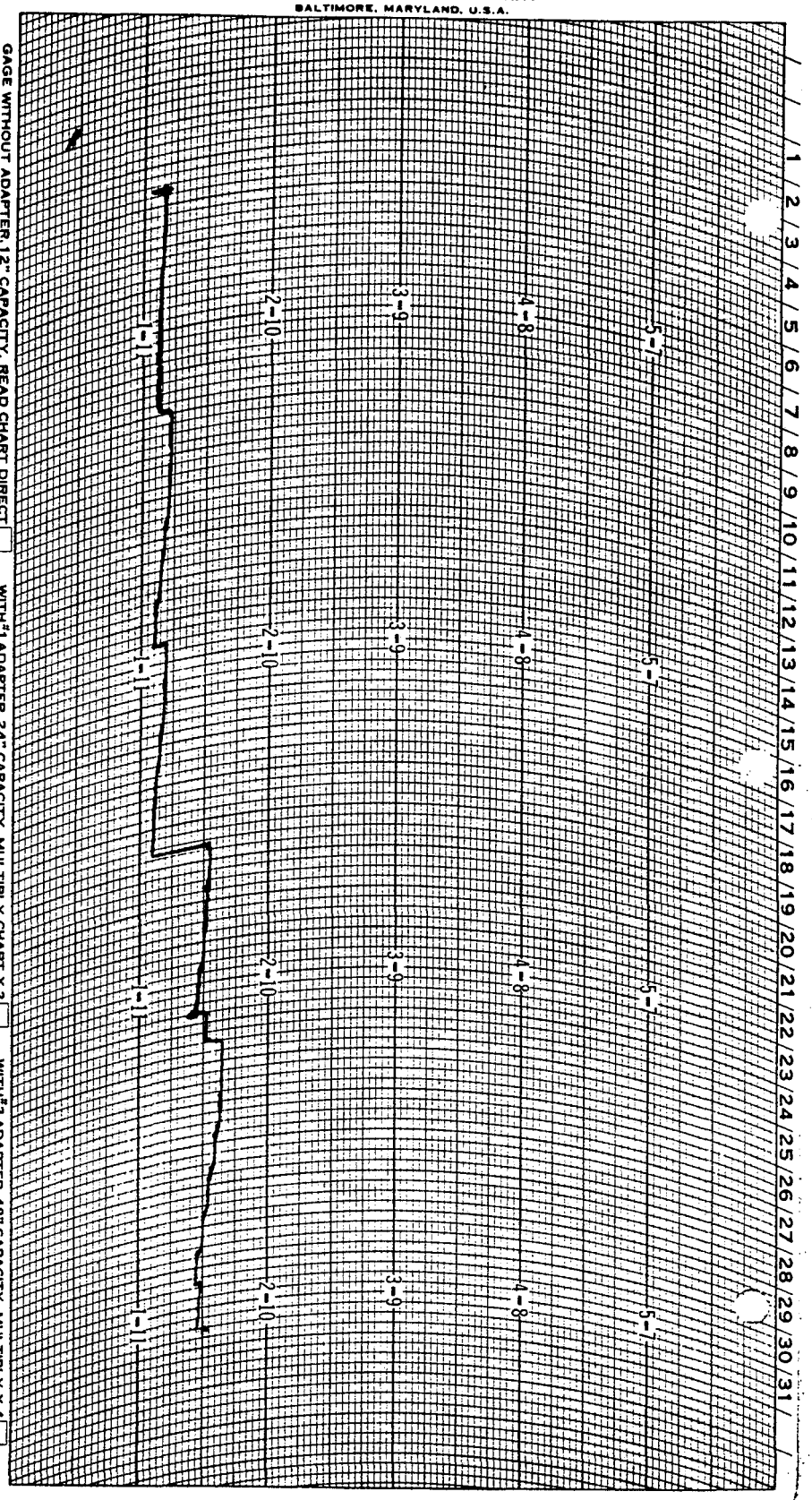
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBORSKI ON 1350 A.M. P.M. 7-3 19 90

LOCATION EAST MTN OFF 1250 A.M. P.M. 7-31 19 90

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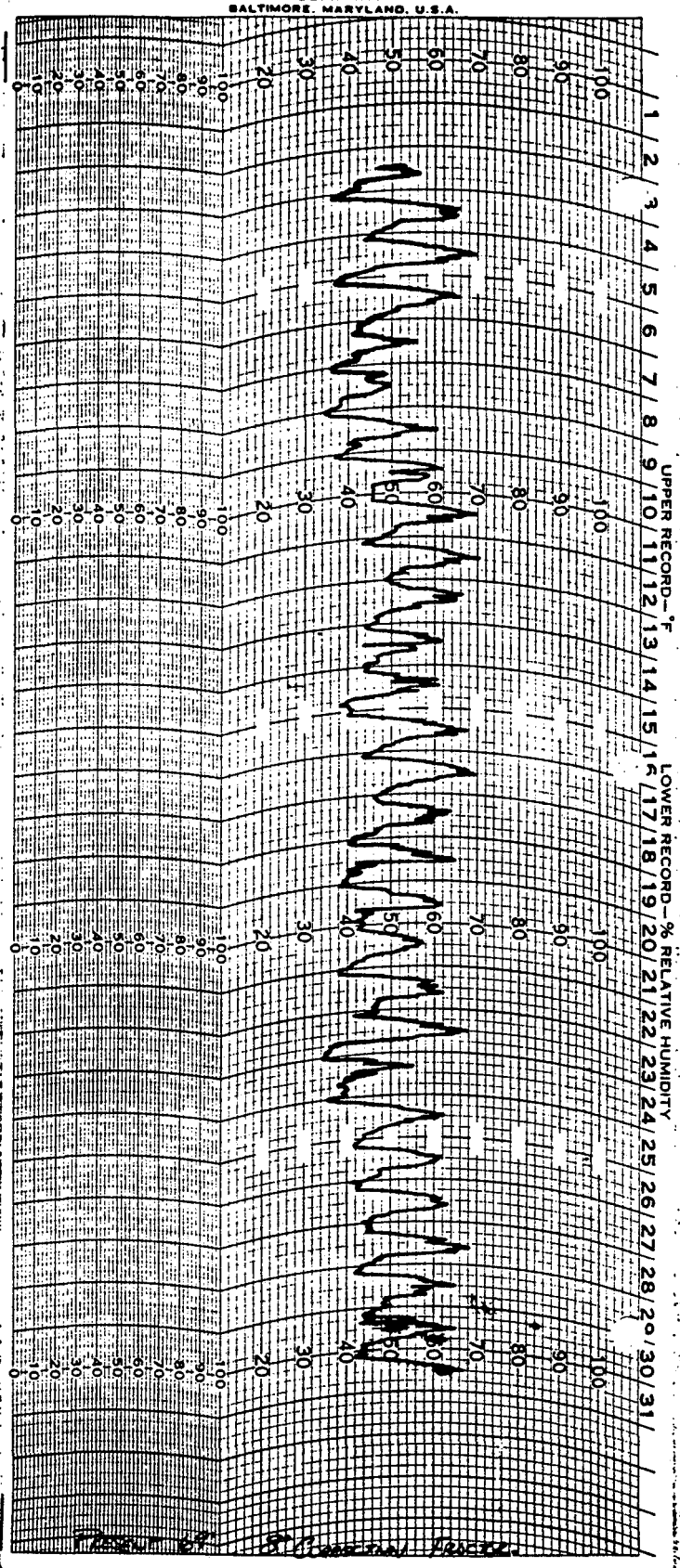
HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBOSKI ON 1355 AM/PM 7-3 1990

STATION EAST MTN. OFF 1250 AM/PM 7-31 1990

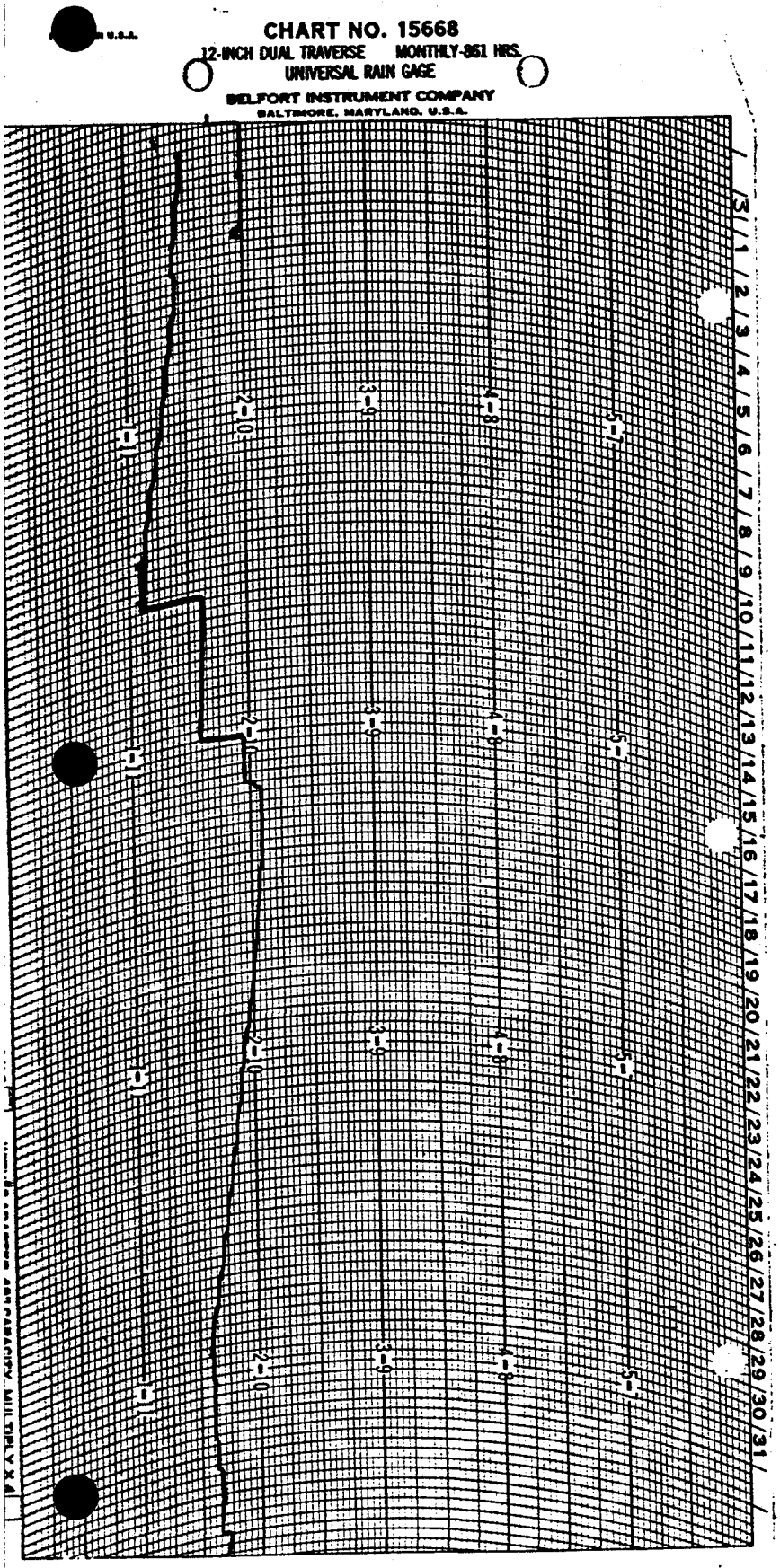
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBORSKI ON 1250 A.M. P.M. 7-31 1990

STATION EAST MTN OFF 1645 A.M. P.M. 9-7 19 90

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HYGROTHERMOGRAPH

CHART NO. 15627

MONTHLY-861 HRS.

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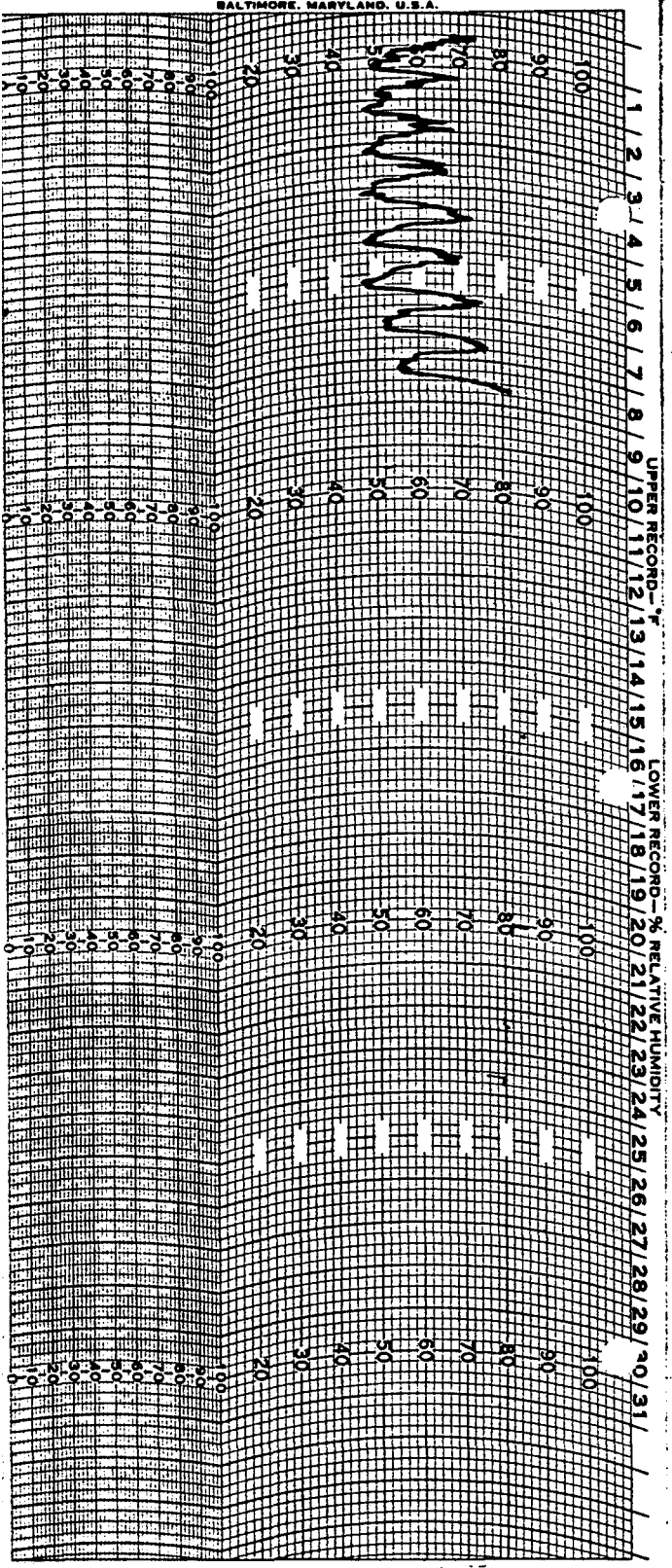

OBSERVER Semborski ON 1750 7-31 1990

STATION EAST MTN OFF 1500 8-9 1990

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CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.
UNIVERSAL RAIN GAGE

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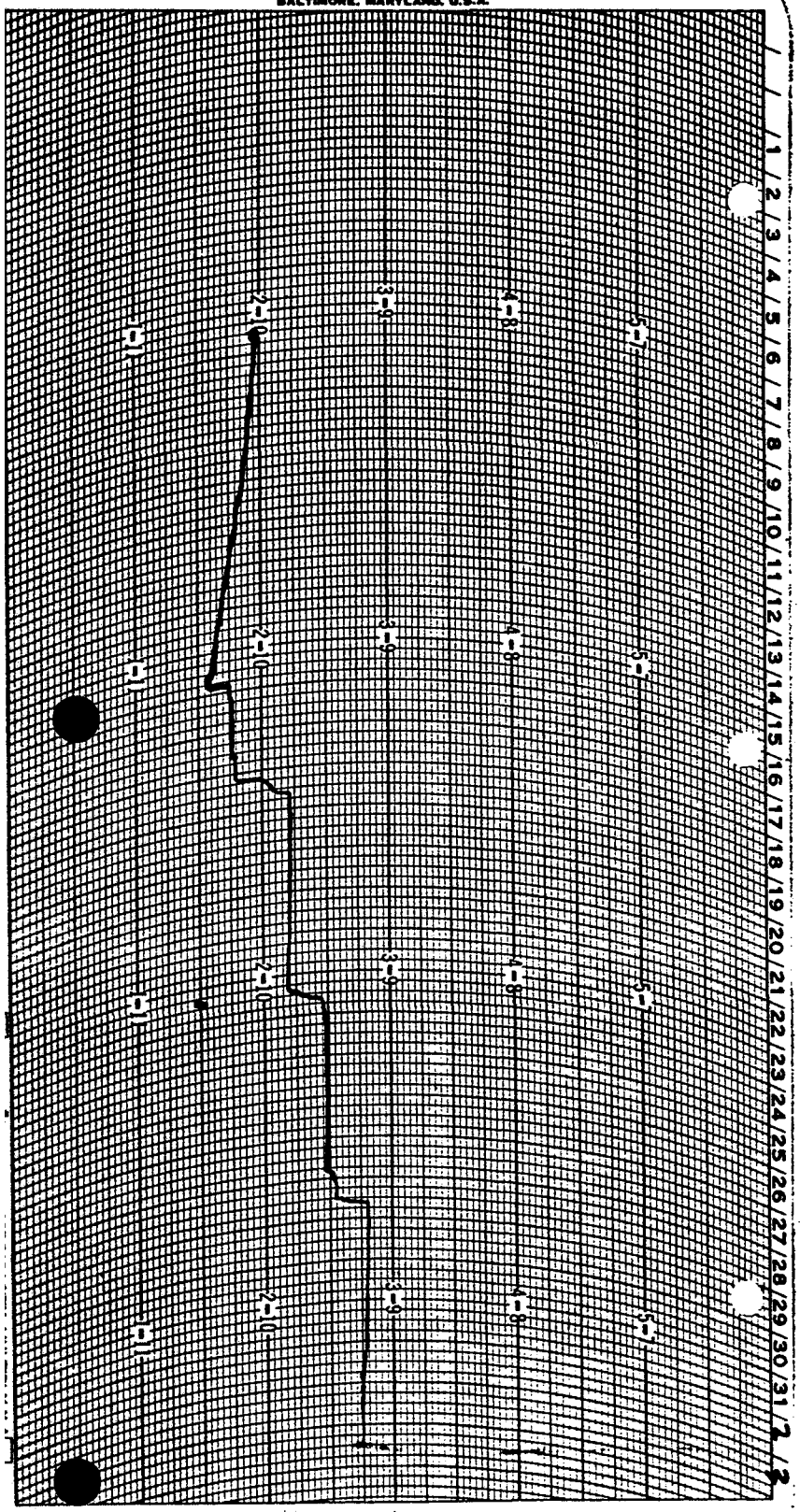

OBSERVER SEMBORSKI ON 1645 AM PM 9-7 1990

STATION EAST MTN. OFF 1350 AM PM 10-4 1990

PRINTED IN U.S.A.

HYGROTHERMOGRAPH
CHART NO. 15627
MONTHLY-861 HRS.
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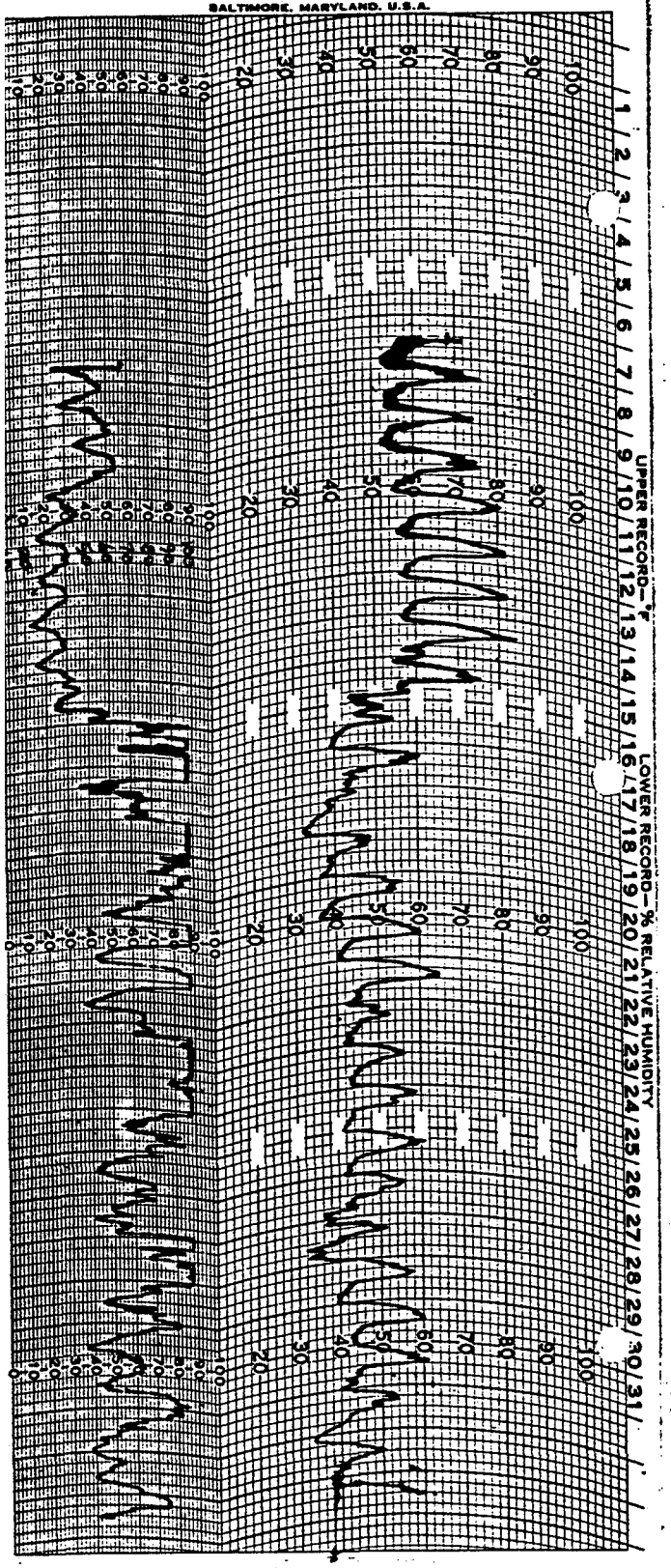


OBSERVER SEMBOSKI ON 1655 A.M. 9-7 1990
STATION EAST MTN OFF 1350 A.M. 10-4 1990

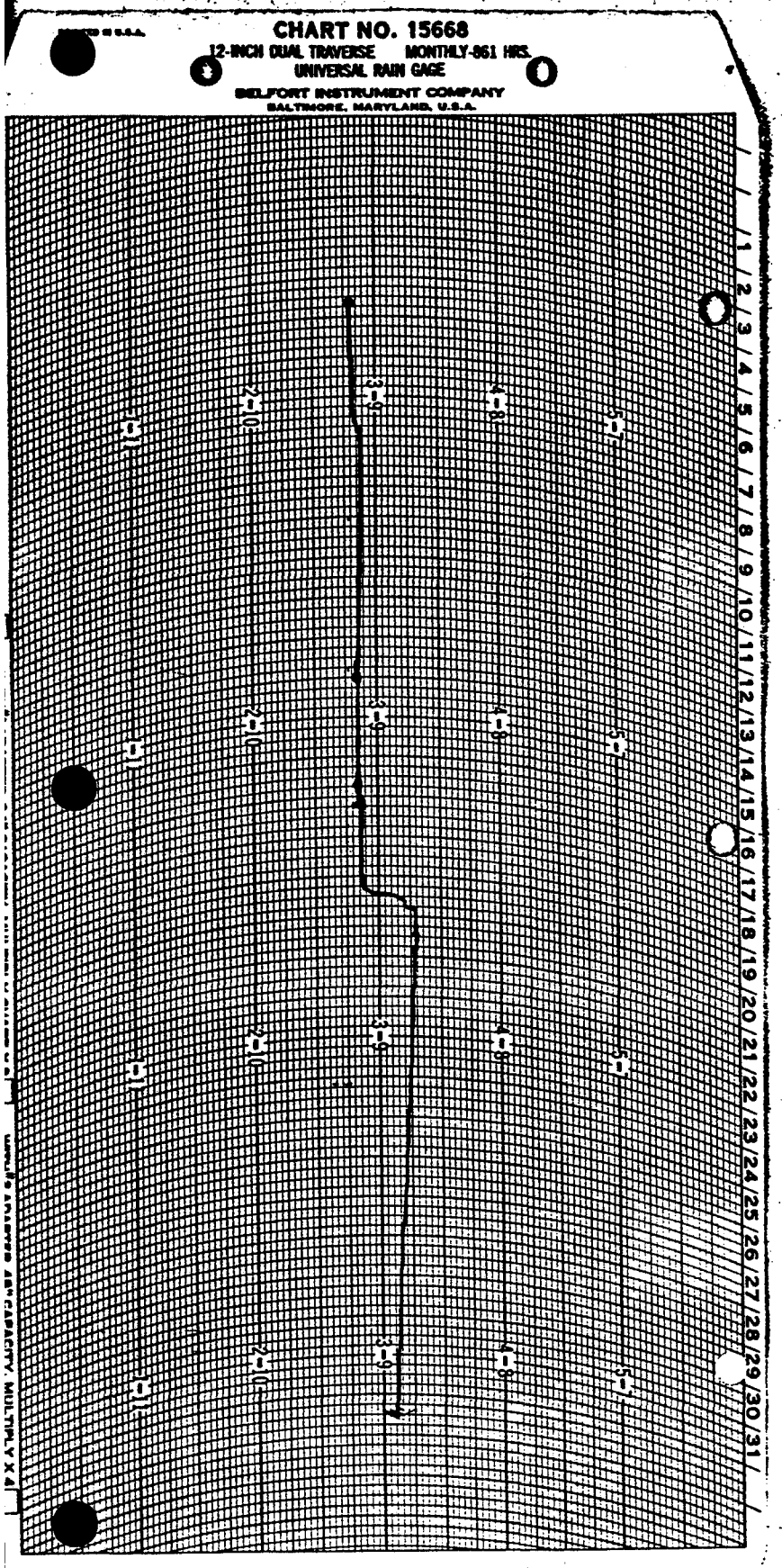
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.



OBSERVER R Fry

STATION East Mtn

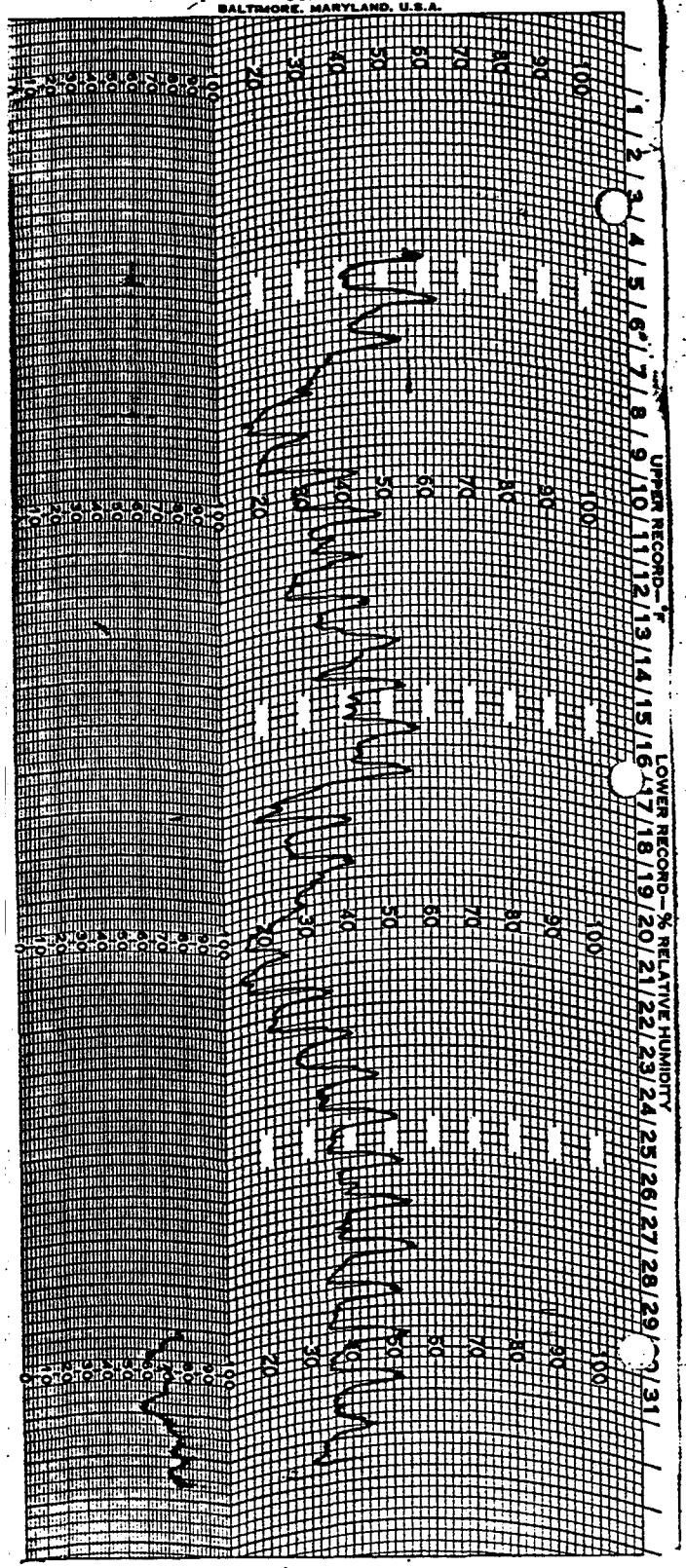
ON 1:45 P.M. Oct 4 1990

OFF 850 P.M. NOV 1 1990

PRINTED IN U.S.A.

HYGROTHERMOGRAPH
CHART NO. 15627
MONTHLY-861 HRS.

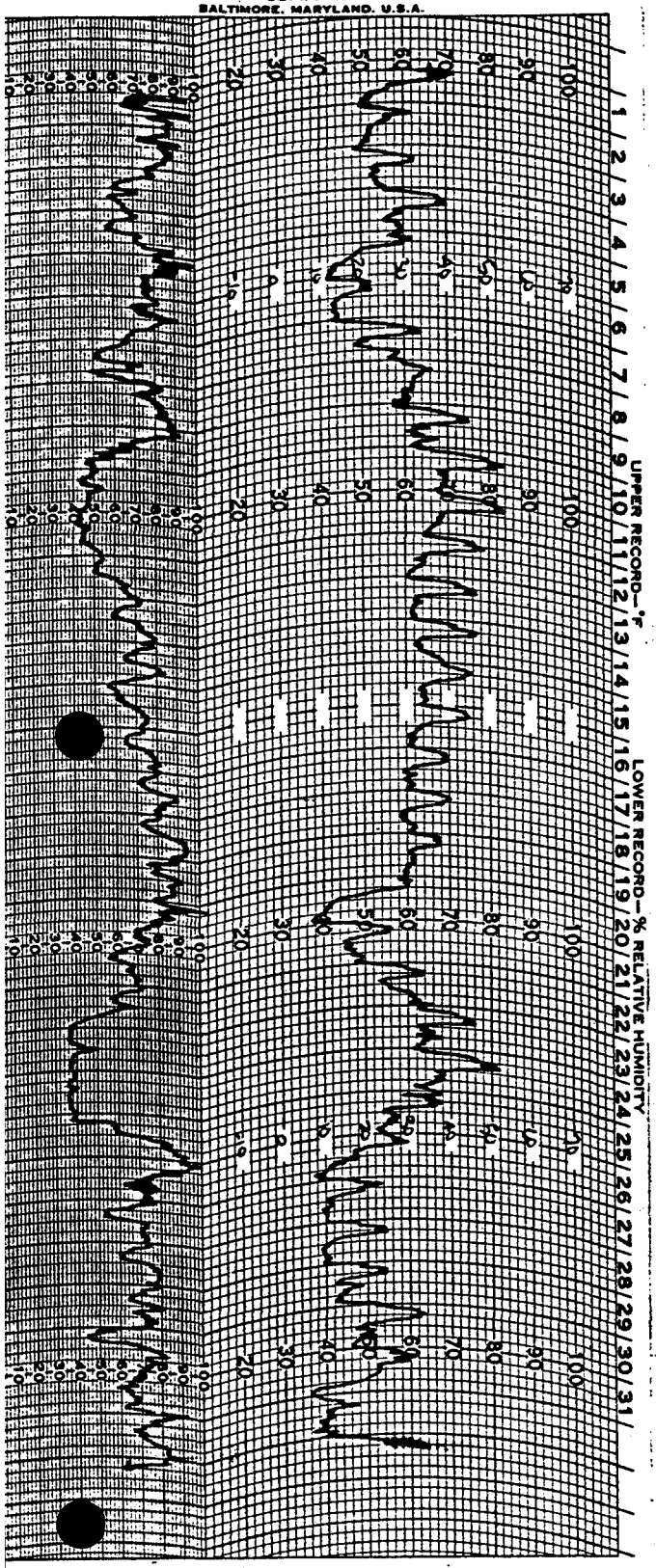
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER SEMBORSKI ON 1350 A.M. P.M. 10-4 1990
STATION EAST MTN OFF 900 A.M. P.M. 11-1 1990

PRINTED IN U.S.A.

HYGROTHERMOGRAPH
CHART NO. 15627
MONTHLY-861 HRS.
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER Senborski ON 900 A.M. P.M. 11-1 1990

STATION EAST MTN OFF 1140 A.M. P.M. 12-3 1992

PRINTED IN U.S.A.

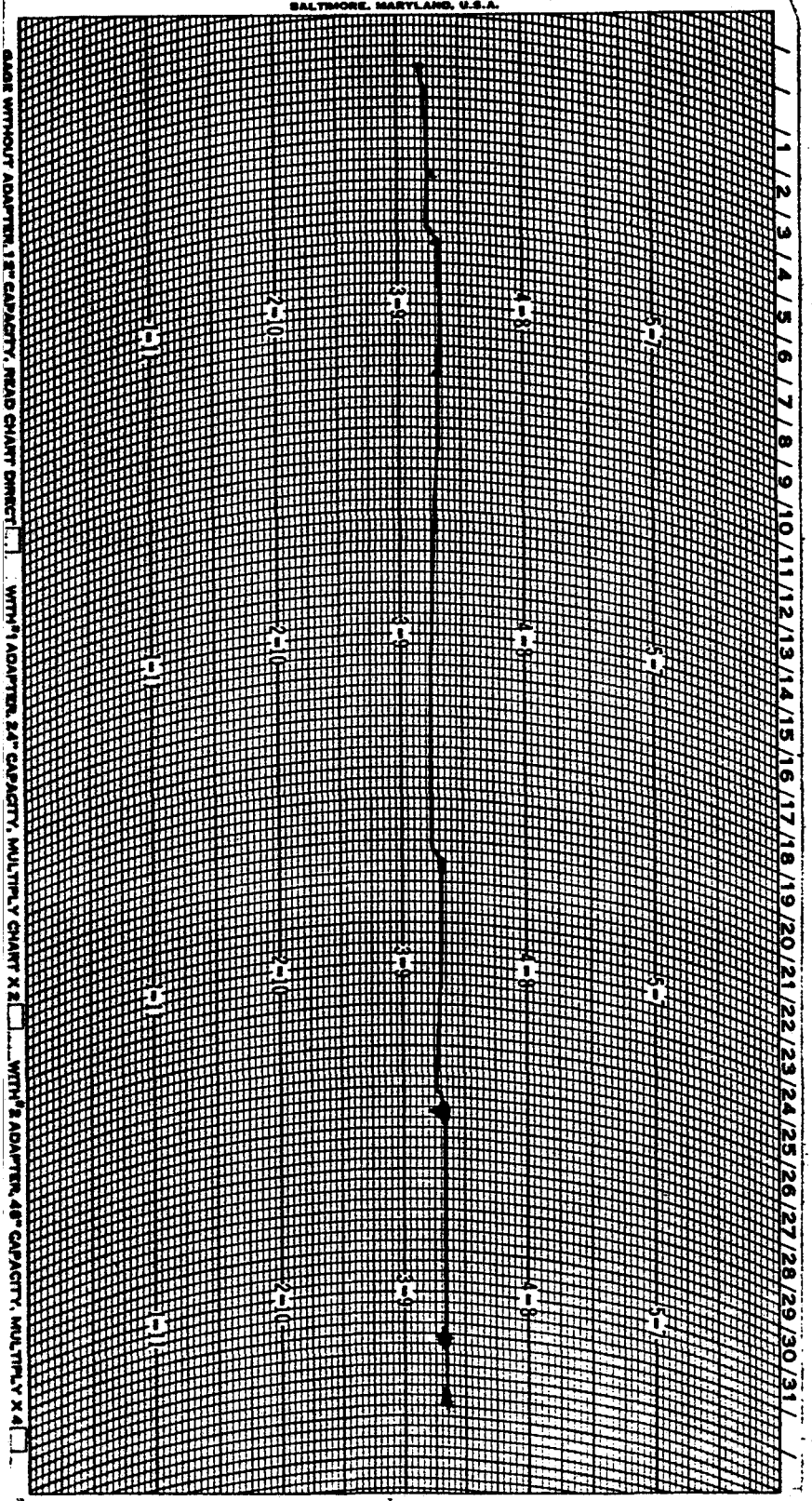
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.



GAGE WITHOUT ADAPTER, 12" CAPACITY, READ CHART DIRECT ☐ WITH 8" ADAPTER, 24" CAPACITY, MULTIPLY CHART X 2 ☐ WITH 8" ADAPTER, 48" CAPACITY, MULTIPLY X 4 ☐

OBSERVER SEMBORSKI ON 850 P.M. NOV 1 1990

STATION EAST MTN OFF 1135 A.M. DEC 3 1990

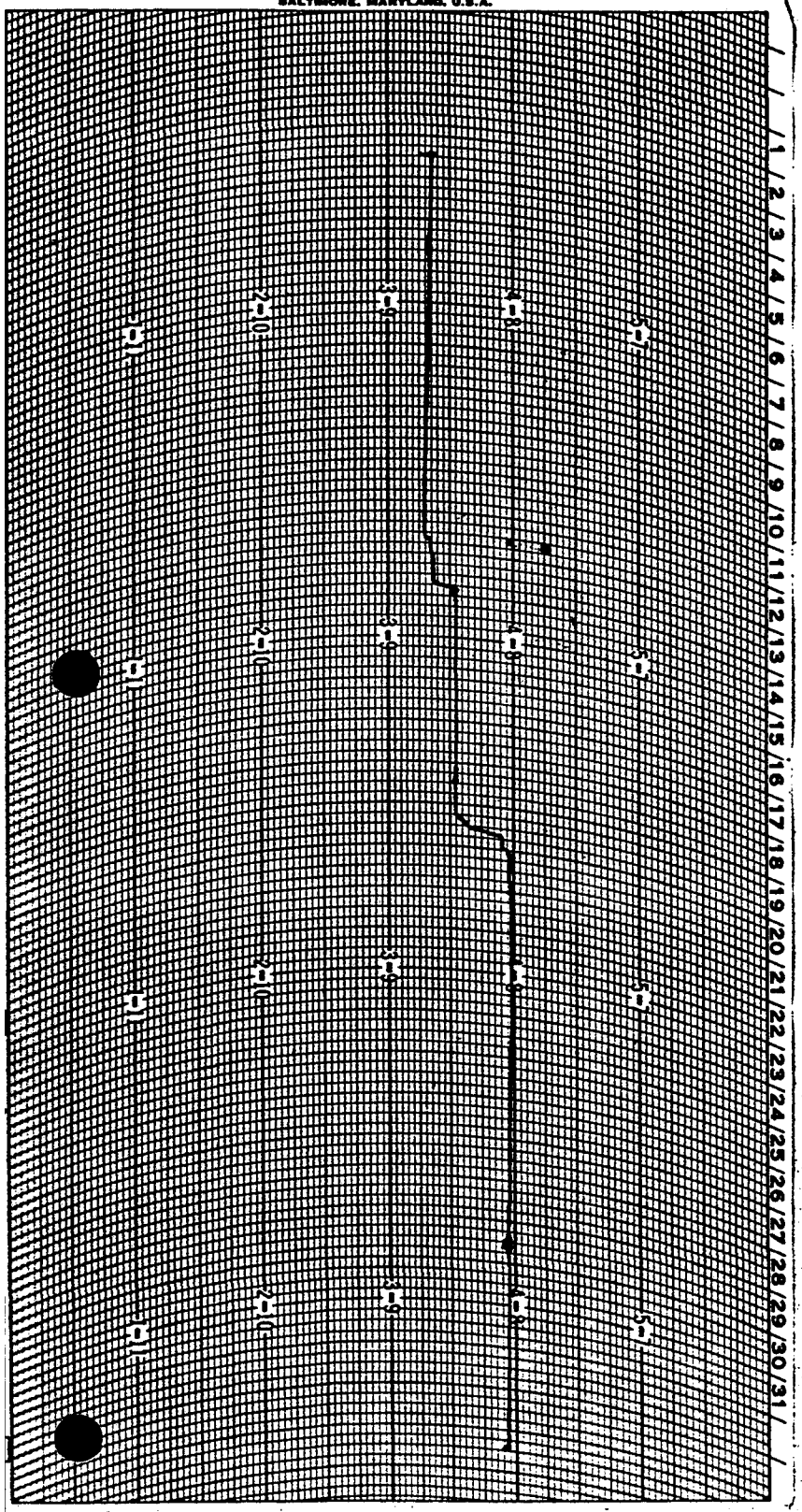
CHART NO. 15668

12-INCH DUAL TRAVERSE MONTHLY-861 HRS.

UNIVERSAL RAIN GAGE

BELFORT INSTRUMENT COMPANY

BALTIMORE, MARYLAND, U.S.A.

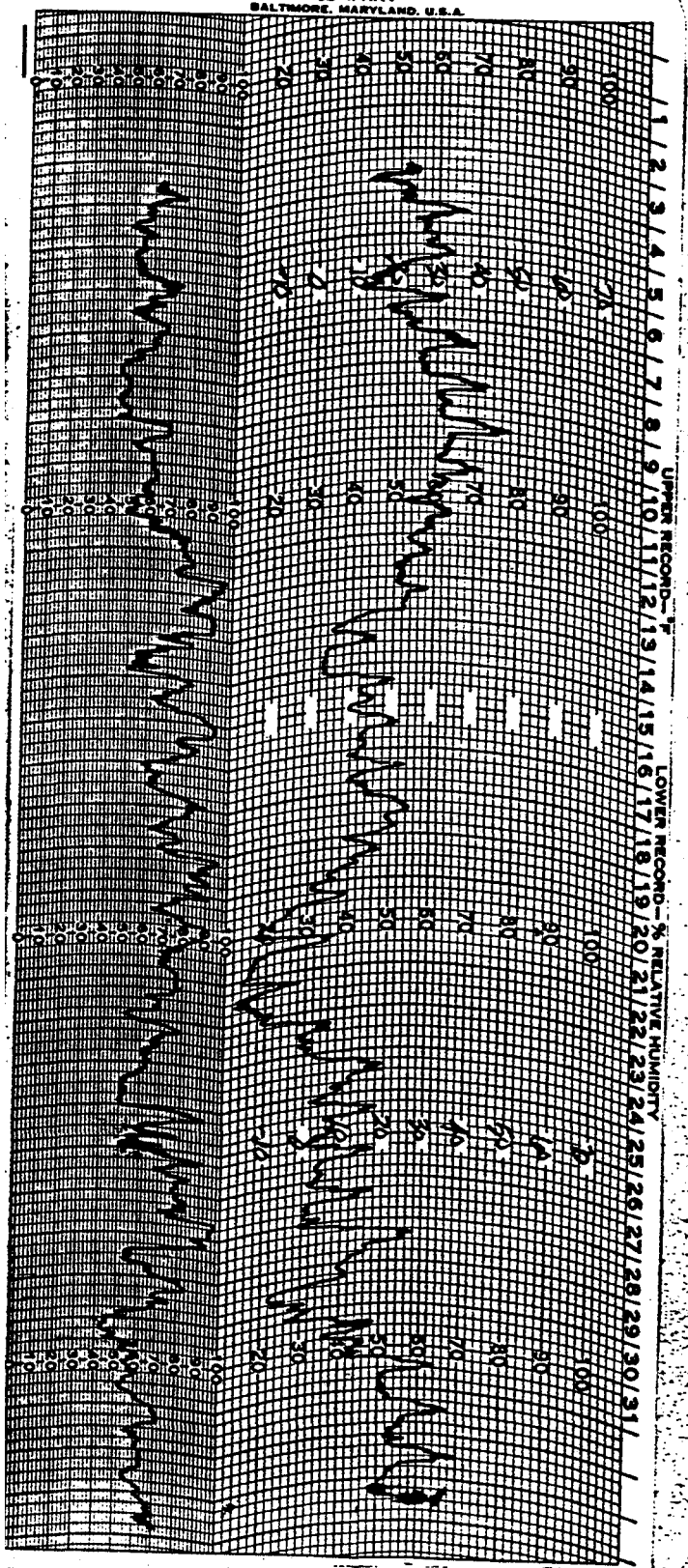


OBSERVER SEMBOSKI ON 1135 A.M. P.M. 12-3 1990

STATION EAST MTN OFF 1125 A.M. P.M. 1-3 1991

PRINTED IN U.S.A.

HYGROTHERMOGRAPH
CHART NO. 15627
MONTHLY-861 HRS.
BELFORT INSTRUMENT COMPANY
BALTIMORE, MARYLAND, U.S.A.



OBSERVER Sembursky ON 1140 PM 12-3 90
STATION EAST MTN OFF 1130 PM 1-3 91

PACIFICORP - ELECTRIC OPERATIONS
FUEL RESOURCES
HYDROLOGIC MONITORING PROGRAM
DEER CREEK, WILBERG/COTTONWOOD, and DES-BEE-DOVE MINES

I. Monitoring Locations

A. Surface Water Hydrology (see Map HM-1 for locations listed below)

1. Cottonwood Creek Drainage System
   a. Cottonwood Canyon Creek - USGS Flume: 700 feet North, 200 feet East of the Southwest corner of Section 31, Township 17 South, Range 7 East.
   b. Grimes Wash
      (1) GWR01 - Right Fork: (Approximately 1500 feet upstream from the inlet culvert for the disturbed area.) 550 feet North, 1500 feet West of the Southwest corner of Section 22, Township 17 South, Range 7 East.
      (2) GWR02 - Left Fork: (Approximately 50 feet upstream from the inlet culvert for the disturbed area.) 200 feet South, 2350 feet East of the Northwest corner of Section 27, Township 17 South, Range 7 East.
      (3) GWR03 - Below the mine: (Approximately 500 feet downstream from the outlet culvert below the disturbed area.) 1770 feet South, 1820 feet West of the Northeast corner of Section 27, Township 17 South, Range 7 East.
      (4) Reclamation Monitoring: In addition to location (3) above, monitoring will occur at a point immediately above the sediment ponds (see Map 4-1).

2. Huntington Creek Drainage System
   a. Huntington Creek: *UP&L's Environmental Department monitors the following four sites along Huntington Creek:
      (1) Below Electric Lake**
      (2) Above the Forks**
      (3) Above the power plant diversion
      (4) Below the power plant

b. Huntington Creek - Fuel Resources

(1) HCC01 - Above Deer Creek Confluence:
1400 feet north, 2200 feet west of the southeast corner of Section 36, Township 16 South, Range 7 East.

(2) HCC02 - Below Deer Creek Confluence:
300 feet north, 300 feet west of the southwest corner of Section 31, Township 16 South, Range 8 East.

(3) HCC03 - Below Huntington Power Plant:
2500 feet north, 1500 feet east of the southeast corner of Section 6, Township 17 South, Range 8 East.

(4) HCC04 - @ Research Farm**
800 feet north, 200 feet east of the southwest corner of Section 5, Township 17 South, Range 8 East.

* The sites listed above are not considered part of PacifiCorp's Hydrologic Monitoring Program but will be included in the annual report as long as data is available.

** Not listed on map due to scale.

c. Deer Creek

(1) DCR01 - Above the mine:
(Approximately 600 feet upstream from the mine facility.) 200 feet North, 800 feet West of the Southeast corner of Section 10, Township 17 South, Range 7 East.

(2) DCR02 - Near Discharge:
(Exit of undisturbed drainage)
2700 feet north, 700 feet east of the southwest corner of Section 10, Township 17 South, Range 7 East.

(3) DCR03 - Below Coal Pile:
(Below old American Fuel Mine)
1200 feet south, 1900 feet east of the northwest corner of Section 11, Township 1 South, Range 7 East.

(4) DCR04 - At Permit:
(Approximately 5,000 feet downstream from the mine facility.) 480 feet North, 3360 feet East of the Northwest corner of Section 1, Township 17 South, Range 7 East.

(5) DCR05 - Below the Mine:
(Approximately 12,000 feet downstream from the mine facility.) 480 feet South, 3360 feet East of the Northwest corner of Section 1, Township 17 South, Range 7 East.

(6) DCR06 - @ Huntington Creek Confluence: (Approximately 15,000 feet downstream from the facility)
1400 feet north, 1100 feet east of the southeast corner of Section 36, Township 16 South, Range 7 East.

d. Meetinghouse Canyon - South Fork:
(Approximately 200 feet upstream from the north and south convergence.) 800 feet North, 1500 feet East of the Southwest corner of Section 35, Township 16 South, Range 7 East.

e. Rilda Canyon:

(1) RCF-1 - Rilda Canyon - Right Fork: 400 feet South, 200 feet West of the Northeast corner of Section 30, Township 16 South, Range 7 East.

(2) RCLF1 - Rilda Canyon - Left Fork: 2400 feet North, 2100 feet West of the Southeast corner of Section 29, Township 16 South, Range 7 East.

(3) RCF2 - Rilda Canyon: 2500 feet South, 400 feet West of the Northeast corner of Section 29, Township 16 South, Range 7 East.

(4) RCF3 - Rilda Canyon: 2550 feet South, 1000 feet East of the Northeast corner of Section 28, Township 16 South, Range 7 East.

(5) RCW4 - Rilda Canyon: 850 feet North, 1900 feet West of the Southeast corner of Section 26, Township 16 South, Range 7 East.

3. Reclamation Monitoring: Following stage 1 final reclamation backfilling and grading monitoring will be conducted at points immediately above and below the last sediment pond(s).

B. Groundwater Hydrology

1. East Mountain Springs (see maps HM-4 and 5 for spring locations)

Burnt Tree * +
Elk Spring * +
Sheba Springs * +
Ted's Tub
79-2
79-10 * +
79-15
79-23 * +
79-24

79-26 * +
79-28 (Flag Lake)
79-29 * +
79-32
79-34
79-35 * +
79-38
79-40
80-41
80-43
80-44 * +
80-46 * +
80-47
80-48
82-51
82-52 * +
84-56 * +
89-60 (Alpine Spring)
89-61
89-65
89-66
89-67
89-68

* Recession Study Springs
+ Baseline analysis performed in 1986 and will be repeated every five years.

2. Piezometric Data
   a. Surface
      (1) Rilda Canyon (see Map HM-1 for locations)
         P1
         P2 (terminated)
         P3
         P4
         P5
         P6
         P7
         EM-47
      (2) Cottonwood Canyon Creek
         EM-31
   b. Underground: In-Mine
      (1) Deer Creek Mine (see Map HM-2 for locations)
         (a) DCP1 3rd N xc-8
         (b) DCP2 3rd N xc-29 (terminated)
         (c) DCP3 3rd N xc-55
         (d) DCP4 1st W xc-29

(2) Wilberg/Cottonwood Mine (see Map HM-3 for locations)
   (a) WCP1 5th W xc-16
   (b) WCP2 3rd S xc-14
   (c) WCP3 3rd S xc-44

3. In-Mine
   a. Deer Creek Mine (see Map HM-2 for locations)
      (a) 2nd Right Fault Zone
      (b) 3rd North xc-65 (TW-10)
   b. Wilberg/Cottonwood Mines (see Map HM-3 for locations)
      (a) 2nd South xc-11
      (b) 4th East xc-24

4. Waste Rock Wells (see Map HM-1 for locations)
   a. Deer Creek
   b. Cottonwood

II. Monitoring Schedule

A. Field Measurement: Listed below are the sites which will be monitored by PacifiCorp - Fuel Resources in accordance with the guidelines established by DOGM; i.e.,

- Date and Time
- Flow
- pH
- Temperature
- Conductivity
- Dissolved oxygen (perennial streams only)

1. Cottonwood Canyon Creek
   a. Cottonwood Canyon Creek - USGS Flume
   b. Grimes Wash
      (1) GWR01
      (2) GWR02
      (3) GWR03

2. Huntington Canyon Drainage
   a. Deer Creek
      (1) DCR01
      (2) DCR04
      (3) DCR06
   b. Huntington Creek
      (1) HCC01
      (2) HCC02
      (3) HCC04
   c. Meetinghouse Canyon - South Fork
   d. Rilda Canyon
      (1) RCF1
      (2) RCF3
      (3) RCW4

3. East Mountain Springs (see monitoring location list)

4. In-Mine
   a. Deer Creek
   b. Wilberg/Cottonwood

5. Waste Rock Wells
   a. Deer Creek
   b. Cottonwood

All sites will be monitored monthly except for East Mountain Springs, in-mine locations, and waste rock wells. East Mountain Springs will be field tested during the months of July and October. In addition, the Recession Study Springs (denoted by asterisks in the Monitoring Location section) will be field tested from July

through October. In-mine locations will be field tested for all field parameters except pH, conductivity, and dissolved oxygen. Waste rock wells will be field tested quarterly.

B. Quality Sampling (Laboratory Measurements)

1. Surface Water Hydrology: Water samples will be collected and analyzed quarterly (one sample at low flow and high flow) during the first or second week of the quarter. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table #1). Quarterly sampling was initiated during March 1988 and will continue throughout the year; i.e., June, September, and December. Baseline analysis was performed in 1986 and will be repeated every five years thereafter.
   a. Cottonwood Creek Drainage, Grimes Wash
      (1) GWR01
      (2) GWR02
      (3) GWR03
   b. Huntington Creek Drainage
      (1) Deer Creek
         (a) DCR01
         (b) DCR04
         (c) DCR06
      (2) Huntington Creek
         (a) HCC01
         (b) HCC02
         (c) HCC04
      (3) Meetinghouse Canyon - South Fork: MCH01
      (4) Rilda Canyon
         (a) RCF1
         (b) RCF3
         (c) RCW4

2. Groundwater Hydrology
   a. East Mountain Springs: Water samples will be collected and analyzed during the months of July and October. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
   b. In-Mine: Two water samples will be collected and analyzed per mine quarterly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
   c. Waste Rock Wells: One water sample will be collected and analyzed per location quarterly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).

III. Annual Reports

All data collected regarding the hydrology of East Mountain will be summarized by the applicant in an annual Hydrologic Monitoring Report. Copies of the report will be submitted to the OSM; U.S. Forest Service; and the Utah State Division of Oil, Gas and Mining. In addition, any raw data collected will be submitted to the Utah State Division of Oil, Gas and Mining on a quarterly basis.

TABLE 1

SURFACE WATER BASELINE, OPERATIONAL, AND POSTMINING WATER QUALITY PARAMETER LIST

FIELD MEASUREMENTS:

- * - Water Levels or Flow
- * - pH
- * - Specific Conductivity (umhos/cm)
- * - Temperature (degrees Centigrade)
- * - Dissolved Oxygen (ppm) [perennial streams only]

LABORATORY MEASUREMENTS: (mg/l) [Major, minor ions and trace elements are to be analyzed in total and dissolved forms.]

- * - Total Dissolved Solids
- # * - Total Settleable Solids
- # * - Total Suspended Solids
- * - Total Hardness (as $CaCO_3$)
- * - Acidity ($CaCO_3$)
- * - Alkalinity - Total
- - Aluminum (Al)
- - Arsenic (As)
- - Barium (Ba)
- - Boron (B)
- * - Carbonate (CO_3^{-2})
- * - Bicarbonate (HCO_3^-)
- - Cadmium (Cd)
- * - Calcium (Ca)
- * - Chloride (Cl^-)
- - Chromium (Cr)
- * - Conductivity
- - Copper (Cu)
- * - Dissolved Oxygen
- - Fluoride (F^-)
- * - Iron (Fe) - Total and Dissolved
- - Lead (Pb)
- * - Magnesium (Mg)
- * - Total Manganese (Mn)
- - Mercury (Hg)
- - Molybdenum (Mo)
- - Nickel (Ni)
- - Nitrogen: Ammonia (HN_3)
- - Nitrate (NO_2)
- - Nitrite (NO_3)
- * - Oil and Grease
- * - pH
- * - Potassium (K)
- - Phosphate (PO_4^{-3})
- - Selenium (Se)
- * - Sodium (Na)
- * - Sulfate (SO_4^{-2})
- - Sulfide (S^-)
- # * - Turbidity
- - Zinc (Zn)
- * - Cation-Anion Balance

Sampling Period:

- - Baseline
- * Operational, Postmining
- # Construction

Sampling Locations:

Deer Creek	1)	DCR01 - Above Mine
	2)	DCR04 - @ Permit Boundary
	3)	DCR06 - @ Huntington Creek Confluence
Grimes Wash	1)	GWR01 - Right Fork (Above Mine)
	2)	GWR02 - Left Fork (Above Mine)
	3)	GWR03 - Below Mine
Huntington Canyon	1)	HCC01 - Above Plant
	2)	HCC02 - Above Plant, Below DC Confluence
	3)	HCC04 - Below Plant, @ Research Farm
Meetinghouse Canyon		MHC01 - Left Fork
Rilda Canyon	1)	RCF1
	2)	RCF3
	3)	RCW4

TABLE 2

GROUNDWATER BASELINE, OPERATIONAL, AND POSTMINING WATER QUALITY PARAMETER LIST

FIELD MEASUREMENTS:

- * - Water Levels or Flow
- * - pH
- * - Specific Conductivity (umhos/cm)
- * - Temperature (degrees Centigrade)

LABORATORY MEASUREMENTS: (mg/l) [Major, minor ions and trace elements are to be analyzed in total and dissolved forms.]

- * - Total Dissolved Solids
- * - Total Suspended Solids
- * - Total Hardness (as $CaCO_3$)
- * - Alkalinity ($CaCO_3$)
- - Aluminum (Al)
- - Arsenic (As)
- - Barium (Ba)
- - Boron (B)
- * - Carbonate (CO_3^{-2})
- * - Bicarbonate (HCO_3^-)
- - Cadmium (Cd)
- * - Calcium (Ca)
- * - Chloride (Cl^-)
- - Chromium (Cr)
- * - Conductivity
- - Copper (Cu)
- * - Dissolved Oxygen
- - Fluoride (F^-)
- * - Iron (Fe)
- - Lead (Pb)
- * - Magnesium (Mg)
- * - Manganese (Mn)
- - Mercury (Hg)
- - Molybdenum (Mo)
- - Nickel (Ni)
- - Nitrogen: Ammonia (HN_3)
- - Nitrate (NO_2)
- - Nitrite (NO_3)
- * - pH
- * - Potassium (K)
- - Phosphate (PO_4^{-3})
- - Selenium (Se)
- * - Sodium (Na)
- * - Sulfate (SO_4^{-2})
- - Sulfide (S^-)
- - Zinc (Zn)
- * - Cation-Anion Balance

Sampling Period:

- - Baseline
- * Operational, Postmining

Sampling Locations:

In-Mine
  Deer Creek
  Wilberg/Cottonwood
East Mountain Springs
Waste Rock Wells
  Deer Creek
  Wilberg/Cottonwood

TABLE 3

MINE DISCHARGE AND SEDIMENT POND

FIELD MEASUREMENTS:

*	-	Water Levels or Flow
*	-	pH
*	-	Specific Conductivity (umhos/cm)
*	-	Temperature

LABORATORY MEASUREMENTS: (mg/l) [Major, minor ions and trace elements are to be analyzed in total and dissolved forms.]

*	x	-	Total Dissolved Solids
*		-	Total Settleable Solids
*	x	-	Total Suspended Solids
*	x	-	Total Hardness (as $CaCO_3$)
*	x	-	Acidity ($CaCO_3$)
*	x	-	Alkalinity - Total
		-	Aluminum (Al)
		-	Arsenic (As)
		-	Barium (Ba)
		-	Boron (B)
*	x	-	Carbonate (CO_3^{-2})
*	x	-	Bicarbonate (HCO_3^-)
		-	Cadmium (Cd)
*	x	-	Calcium (Ca)
*	x	-	Chloride (Cl^-)
		-	Chromium (Cr)
*	x	-	Conductivity
		-	Copper (Cu)
*	x	-	Dissolved Oxygen
		-	Fluoride (F^-)
*	x	-	Iron (Fe) - Total and Dissolved
		-	Lead (Pb)
*	x	-	Magnesium (Mg)
*	x	-	Total Manganese (Mn)
		-	Mercury (Hg)
		-	Molybdenum (Mo)
		-	Nickel (Ni)
		-	Nitrogen: Ammonia (HN_3)
		-	Nitrate (NO_2)
		-	Nitrite (NO_3)
*	x	-	Oil and Grease
*	x	-	pH
*	x	-	Potassium (K)
		-	Phosphate (PO_4^{-3})
		-	Selenium (Se)
*	x	-	Sodium (Na)
*	x	-	Sulfate (SO_4^{-2})
		-	Sulfide (S^-)
	x	-	Turbidity
		-	Zinc (Zn)
*	x	-	Cation-Anion Balance

Sampling Period:

- Baseline
* Sediment Pond Discharge
x Mine Discharge

Sampling Locations:

Mine Discharge
- Deer Creek
- Wilberg/Cottonwood
  1) Grimes Wash
  2) Miller Canyon

Sediment Ponds
- Deer Creek
- Des-Bee-Dove
- Wilberg/Cottonwood

YEAR -- 1991

BASELINE

LOCATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MINE DISCHARGE												
TABLE 3												
DEER CREEK	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
TABLE 3 - WILBERG/COTTONWOOD												
Grimes Wash	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
Miller Canyon	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
SEDIMENT PONDS												
TABLE 3												
DEER CREEK	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
TABLE 3 - DES-BEE-DOVE												
		Sampled on an as-needed basis										
TABLE 3 - WILBERG/COTTONWOOD												
Wilberg Mine	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
Cottonwood Canyon		Sampled on an as-needed basis										
WASTE ROCK WELLS												
TABLE 3 - DEER CREEK												
DCWR 1			baseline			operational			baseline			operational
TABLE 3 - WILBERG/COTTONWOOD												
WCWR 1			baseline			operational			baseline			operational

YEAR -- 1991
(Baseline monitoring)

		LOCATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SURFACE	HYDROLOGY	COTTONWOOD CREEK DRAINAGE SYSTEM												
		COTTONWOOD CANYON CREEK	field	field	field	field	field	field	field	field	field	field	field	field
		GRIMES WASH		TABLE 1										
		GWR01	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		GWR02	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		GWR03	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		HUNTINGTON CREEK DRAINAGE SYSTEM												
		DEER CREEK		TABLE 1										
		DCR01	operational		January	through	May	baseline	operational		July	through	November	baseline
		DCR04	operational		January	through	May	baseline	operational		July	through	November	baseline
		DCR06	operational		January	through	May	baseline	operational		July	through	November	baseline
		MEETINGHOUSE CANYON		TABLE 1										
		MCH01	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		RILDA CANYON		TABLE 1										
		FLUME 1 RCF1	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		FLUME 2 RCF2	field	field	field	field	field	field	field	field	field	field	field	field
		FLUME 3 RCF3	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		WEIR 4 RCW4	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		RCLF1	field	field	field	field	field	field	field	field	field	field	field	field
		HUNTINGTON CREEK		TABLE 1										
		HCC01	operational		January	through	May	baseline	operational		July	through	November	baseline
		HCC02	operational		January	through	May	baseline	operational		July	through	November	baseline
		HCC04	operational		January	through	May	baseline	operational		July	through	November	baseline
GROUNDWATER	HYDROLOGY	EAST MOUNTAIN SPRINGS		TABLE 2					baseline *			baseline *		
		RECESSION STUDY SPRINGS								field	field			
		IN-MINE		TABLE 2										
		DEER CREEK			operational			baseline			operational			baseline
		WILBERG/ COTTONWOOD			operational			baseline			operational			baseline

* includes recession study springs

YEAR -- 1992-1995

		LOCATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SURFACE	HYDROLOGY	COTTONWOOD CREEK DRAINAGE SYSTEM												
		COTTONWOOD CANYON CREEK	field	field	field	field	field	field	field	field	field	field	field	field
		GRIMES WASH		TABLE 1										
		GWR01	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		GWR02	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		GWR03	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		DEER CREEK		TABLE 1										
		DCR01	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		DCR04	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		DCR06	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		HUNTINGTON CREEK DRAINAGE SYSTEM												
		MEETINGHOUSE CANYON		TABLE 1										
		MCH01	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		RILDA CANYON		TABLE 1										
		FLUME 1 RCF1	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		FLUME 2 RCF2	field	field	field	field	field	field	field	field	field	field	field	field
		FLUME 3 RCF3	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		WEIR 4 RCW4	field	field	operational	field	field	baseline	field	field	operational	field	field	baseline
		RCLF1	field	field	field	field	field	field	field	field	field	field	field	field
		HUNTINGTON CREEK		TABLE 1										
		HCC01	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		HCC02	field	field	operational	field	field	operational	field	field	operational	field	field	operational
		HCC04	field	field	operational	field	field	operational	field	field	operational	field	field	operational
GROUNDWATER	HYDROLOGY	EAST MOUNTAIN SPRINGS		TABLE 2					operational *			operational *		
		RECESSION STUDY SPRINGS								field	field			
		IN-MINE		TABLE 2										
		DEER CREEK			operational			operational			operational			operational
		WILBERG/ COTTONWOOD			operational			operational			operational			operational

* includes recession study springs

YEAR -- 1992-1995

LOCATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MINE DISCHARGE												
TABLE 3												
DEER CREEK	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
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Miller Canyon	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
SEDIMENT PONDS												
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DEER CREEK	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
TABLE 3 - DES-BEE-DOVE												
	Sampled on an as-needed basis											
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Wilberg Mine	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational	operational
Cottonwood Canyon	Sampled on an as-needed basis											
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DCWR 1			operational			operational			operational			operational
TABLE 3 - WILBERG/COTTONWOOD												
WCWR 1			operational			operational			operational			operational